The Queensland Radio News

"Your Own Wireless Journal"

6D.

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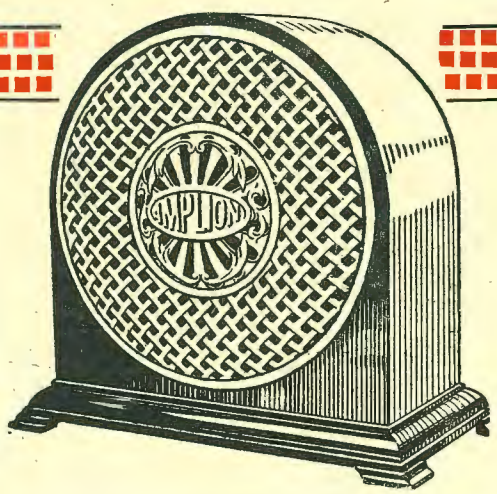

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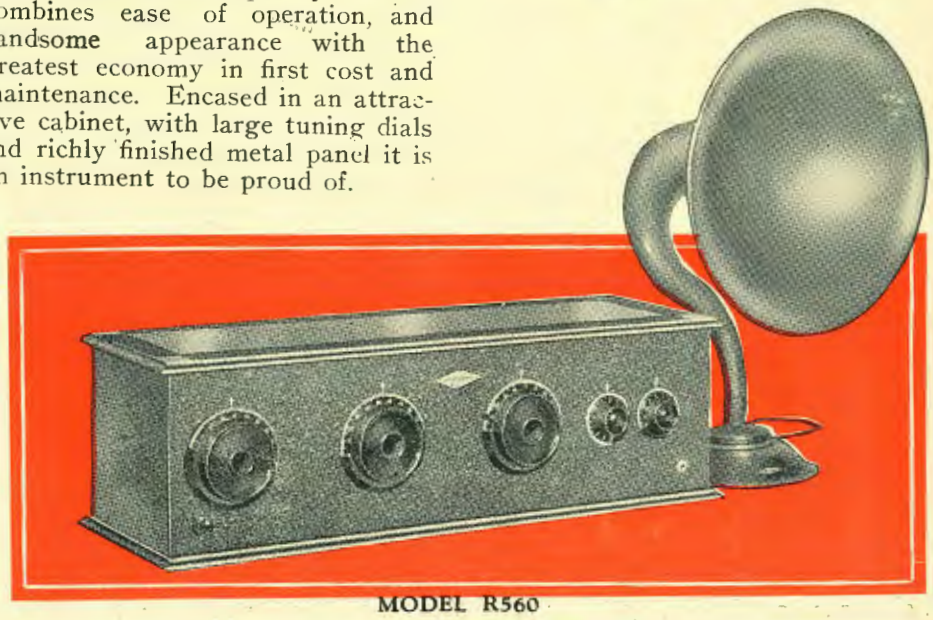

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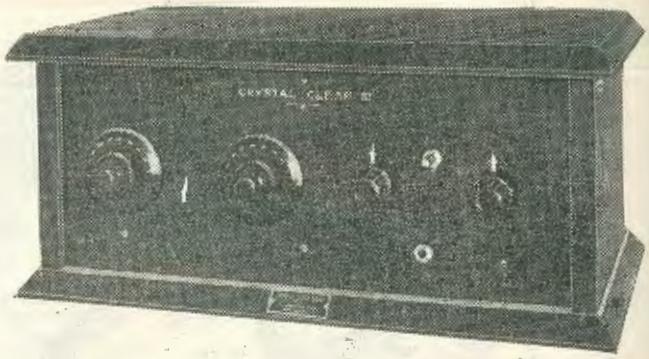
Three-Valve Set, built of best component parts to the latest long-distance circuit. This set will bring in all Australian stations, and gives splendid loud-speaker strength. In solid Maple Cabinet, complete with all Accessories (loud speaker extra).

£14-10-0



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Buy a worth-while three, four, or five valve set through this easy purchase plan. You'll never miss the few shillings weekly, and in a month or two you will have it paid off!
"Crystal Clear" Receivers have a wonderful reputation in Victoria; they are becoming immensely popular here, too. Write to-day for full particulars.

Latest Circuits, Guaranteed Efficiency, Lowest Prices

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"CRYSTAL CLEAR" SLIDER, with polished ebonite panel. Selective, and has good range. Will work several pairs of headphones. Supplied complete with all accessories **32/6**

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4QG Programmes for October

FRIDAY, OCTOBER 1.—The Federal Band. Organ Recital by Mrs. Hilda Woolmer. Dance Music from Crystal Palace.

SATURDAY, OCTOBER 2.—Relaying of State Banquet from Parliament House.

SUNDAY, OCTOBER 3.—St. Andrew's Church of England, South Brisbane. Metropolitan Band from Botanical Gardens; and Brisbane Municipal Concert Band from Wickham Park.

MONDAY, OCTOBER 4.—Savoy Orchestra. Crystal Palace.

TUESDAY, OCTOBER 5.—Drawing Room Entertainment from Lounge of Hotel Carlton.

WEDNESDAY, OCTOBER 6.—Federal Band and Savoy Orchestra.

THURSDAY, OCTOBER 7.—4QG Concert Orchestra.

FRIDAY, OCTOBER 8.—The Lyric Entertainers.

SATURDAY, OCTOBER 9.—Musical Festival, relayed from Nambour.

SUNDAY, OCTOBER 10.—International Bible Students and Excelsior Band from Botanic Gardens; and Brisbane Municipal Concert Band from Wickham Park.

MONDAY, OCTOBER 11.—The Federal Band and Anglo Male Quartette Party.

TUESDAY, October 12.—Blind Society Concert.

WEDNESDAY, OCTOBER 13.—Studio Concert.

THURSDAY, OCTOBER 14.—The Gaiety Orchestra and St. Joseph's Church Choir.

FRIDAY, OCTOBER 15.—A Nautical Night.

SATURDAY, OCTOBER 16.—Relaying of Nambour Rural School Fete; and Violin Concert from Studio of Luis Amadeo Pares.

SUNDAY, OCTOBER 17.—All Saints' Church of England, Federal Band from Botanical Gardens; and Brisbane Municipal Concert Band from Wickham Park.

MONDAY, OCTOBER 18.—Anglo Quartette Party and Crystal Palace.

TUESDAY, OCTOBER 19.—4QG Concert Party.

WEDNESDAY, OCTOBER 20.—The Misses Todd's Recital.

THURSDAY, OCTOBER 21.—Gaiety Orchestra and Studio Concert.

FRIDAY, OCOTBER 22.—The Federal Band and Savoy Orchestra.

SATURDAY, OCTOBER 23.—Studio Concert.

SUNDAY, OCTOBER 24.—Albert Street Methodist Church, Citizens' Band from Botanic Gardens; and Municipal Concert Band from Wickham Park.

MONDAY, OCTOBER 25.—Savoy Orchestra. Silkstone Apollo Club.

TUESDAY, OCTOBER 26.—The Metropolitan Band. Anglo Male Quartette.

WEDNESDAY, OCTOBER 27.—Studio Concert.

THURSDAY, OCTOBER 28.—Sandgate Methodist Choir.

FRIDAY, OCTOBER 29.—Digger Night.

SATURDAY, OCTOBER 30.—Studio Concert.

SUNDAY, OCTOBER 31.—St. John's Anglican Cathedral. Band Concerts.

HATS OFF TO 2FC!

First Australian Station to Successfully Broadcast from an Aeroplane.

On the afternoon of Sunday, September 5th, Station 2FC arranged a most unique entertainment from the clouds.

To carry out a continuous transmission from a plane travelling 80 to 100 miles per hour, covering a distance of 100 miles in one hour and ten minutes, and reaching an altitude of 10,000 feet is a feat that even the most sanguine one at 2FC did not hope for.

The cheery way in which the announcer, Mr. Laurence Halbert, kept the description moving along was praiseworthy. To find one's self in such unfamiliar surroundings and to keep talking all the time is, in itself, quite a task that Mr. Halbert acquitted himself splendidly, and kept the listeners entertained and amused all the while.

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SAFETY FIRST — UTILITY ALWAYS

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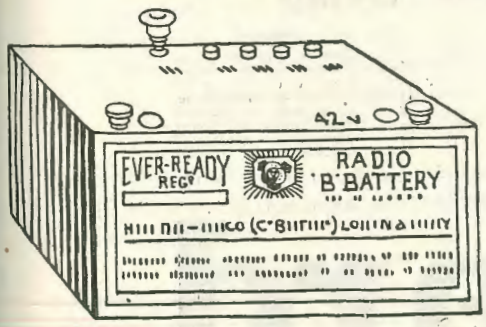

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W.P. 40V. .. .. .. 12/6 X.P. 40V (heavy ser.) 23/-
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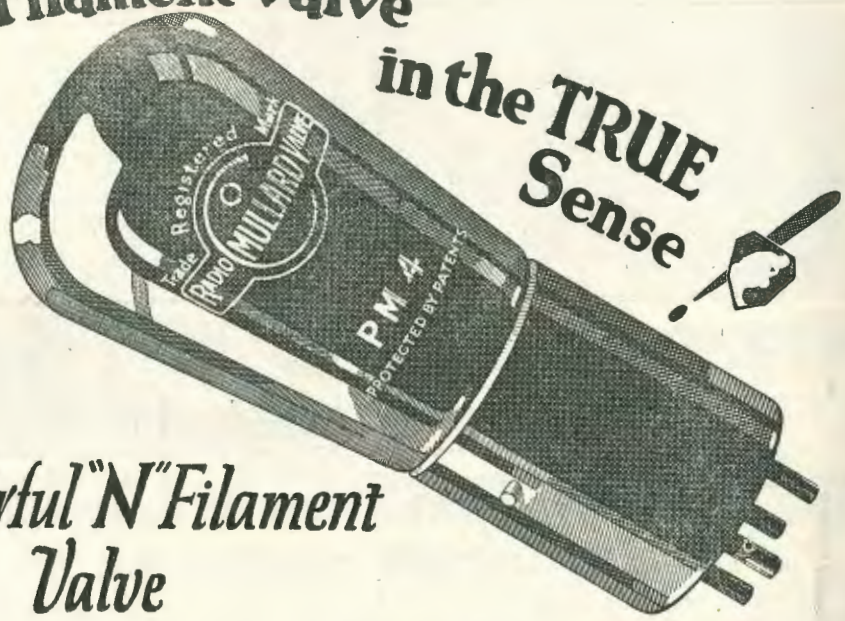

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HF	3.8	0.6	7/-
D.06	3.0	0.06	13/6
D.3	1.8	0.3	13/6
DFA.4	5.0	0.25	13/6
PM.3	3 to 4	0.1	13/6

LF Amplification.

Type	Fil. Volts	Fil. C'rent	Price
LF	3.8	0.6	7/-
D.06	3.0	0.06	13/6
D.3	1.8	0.3	13/6
DFA.1	5.0	0.35	13/6
DFA.3	6.0	0.06	17/6
PM.4	3.7	0.1	13/6

Power Valves.

Type	Fil. Volts	Fil. C'rent	Price
DFA.1	5.0	0.35	13/6
DFA.3	6.0	0.06	17/6
PM.4	3.7	0.1	13/6
DFA.0	3.5	0.35	13/6
DFA.4	5.0	0.25	13/6

Detectors.

When valve is followed by an Intervalve Transformer or telephones, use an LF Amplifier or Power Valve. When valve is followed by a Resistance Capacity Intervalve system use an HF Amplifying Valve.

All Mullard Valves are manufactured at Mullard Works, London, England.

OBTAINABLE FROM EVERY RADIO DEALER IN AUSTRALIA.

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THE QUEENSLAND RADIO NEWS

A Magazine for Amateurs
A. T. BARTLETT, *Editor*

THE EDITOR'S PAGE

The Death-Knell of Long Waves

THE alteration of 2FC's wavelength from 1100 metres to 442 metres has tolled the death-knell of long waves among the important Broadcasting Stations of the Commonwealth. The final rampart of the old contention that "long waves were best" has been shattered, and Station 2FC has eventually bowed to the supremacy of the shorter wavelength.

The change is a most desirable one from every aspect. Broadcast listeners as a body are perhaps the most elated of all. Hitherto only 50 per cent. of sets operated in Queensland possessed a wavelength range capable of accommodating 2FC's transmissions. Thus, with the drop, many hundreds of listeners are to have the entertainments of another very fine station added to the repertoire of their receivers.

The change is bound to show a reflection in the reception strength of 2FC's programmes in this State. While strength to date has been good, 2FC's carrier has always lacked the "kick" so characteristic of 3LO and 2BL, both of which transmit on the 300 metre band.

Those readers who recall the occasion of 3LO's drop from 1760 metres to 375 metres and remember the wonderful improvement in both volume and purity of reception that followed, will predict great things of 2FC—which by the way is the most powerful of all broadcasting stations in the Commonwealth.

There now remains but one long wave "A" Class Broadcasting Station, 6WF (Perth), which by its fondness of high wave bands has failed to cover the distances attained by other stations. It is generally known that 6WF is not easily logged on the Eastern Coast of Australia, but it may come as a surprise to some to learn that 4QG, 2BL, and 3LO are quite frequently received in Perth with good volume. All this points to the greater all-round efficiency of the shorter broadcast wave band.

There is still another and more important viewpoint in the matter. Is this sudden alteration to 2FC's wavelengh the forerunner to the general re-allocation of broadcast wavelength much promised by the P.M.G. Department? We feel that it is so, and should our prophecy be correct, there should be much of interest to report in our next issue.

The Importance of the CABINET!

Excellence in the Cabinet is absolutely necessary to obtain the best results. You can make certain of complete success by using **ROBERTS EXHIBITION CABINET** (registered design), as supplied to leading Australian dealers.

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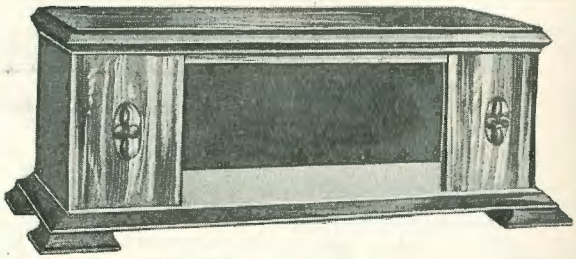

R.W. 100 3-Valve Cabinet.

These Cabinets are faithfully constructed and beautifully finished. They are made in Rosewood and Silky Oak, with Piano Lid.

Illustration R.W. 100 is for a Three Valve Set, the measurements being 15 inch x 7½ inch x ¾ inch(Bakelite Panel Size.)

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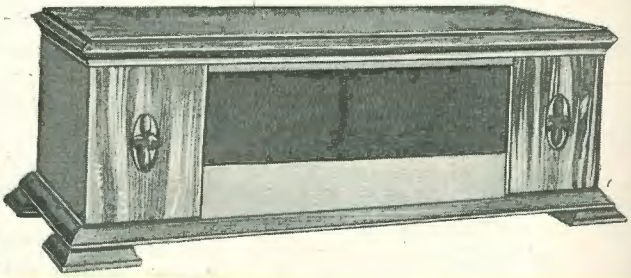
Those living out of town may order with every confidence. Goods are carefully packed and placed **FREE ON RAIL BRISBANE.**



R.W. 101 4-Valve Cabinet.

This is a Four Valve Model. Panel Size 18 inch x 9 inch x ¾

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Some Experimental Wavetraps

(By L. Whitlam, Brisbane)

As stated in our last issue, we are publishing in this number an article from the pen of Mr. L. Whitlam on the subject of Wave-traps. This article embraces a number of experimental circuits, and also the circuit of the wave-trap that won First Prize in the Wave-trap Section at the recent Radio and Electrical Exhibition. We feel sure many of our experimental readers will find them interesting.

With the advent of high powered broadcasting in Australia, the fascination and popularity of wireless is ever increasing, and surprising distances are being covered with the simplest of receiving sets. Nevertheless, a great majority of listeners within a radius of approximately 20 miles of 4QG are, while this station is in operation, almost debarred from listening to stations in other States—simply because the inherent selectivity of their receiver is more or less poor.

It is probably common knowledge that a sufficient degree of inherent selectivity is not obtainable with the usual type of direct coupled circuits, which consist of an ordinary plug in coil shunted by a variable condenser of about .0005 mfd., and which are so much in evidence in about 70 per cent. of receivers. The two most important features of wireless receivers of to-day—features which entirely govern the value of the receiver are sensitivity and selectivity. Now, sensitivity may be defined broadly as the degree to which a combination of suitable valves will respond to the weakest wireless wave, while selectivity—which is generally harder to obtain—is not so easily defined.

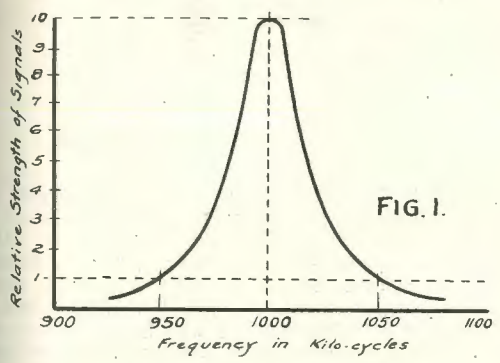

FIG. 1.

Amongst many amateurs a set which is very critical of adjustment is often termed by them a specially selective receiver, whereas it might be just the reverse. Let us refer to John Scott Taggart, the well known English wireless authority, who maintains that a receiving set would be considered selective if it could receive the weaker of two broadcasting stations which are separated by a frequency difference of 15 kilo-cycles and whose signal strengths are in the ratio of 100 to 1. This definition is made clear by reference to the curve, fig. 1., which shows what is termed a resonance curve and which is typical for direct coupled tuning. The determination of the selectivity consists in taking the width of the curve in kilo-cycles at a point such that the relative strengths of signal is reduced to a small fraction of its maximum value. This curve shows the selectivity of this particular circuit to be 50 kilo-cycles for a reduction of signal strength to one-tenth of its maximum value.

Another interesting point in connection with the selectivity of a receiver should help to clear up the so-called "broadness of tuning" attributed to 4QG. It is not so well known that a broadcasting station does not employ a single frequency or wavelength but actually covers a band of wavelengths on either side of the carrier wave. The carrier wave is supposed to be generated at a definite frequency and maintained at such, while the higher musical notes and their harmonics are produced by the outside band of frequencies. The band of frequencies may extend to about 5 kilo-cycles on either side of the carrier, that is, the station might actually cover a total band of frequencies of 10 kilo-cycles. With the above facts in mind it is obvious that in order to obtain music of quality from the loudspeaker the receiver must first be capable of responding with reasonable efficiency to this band of frequencies, which is assumed to be 5,000 cycles out of tune, so to speak, on either side of the carrier. The ideal resonance curve would then be similar to that shown in fig. 2., having a flat top of about 10 kilo-cycles, and not a pointed one as may sometimes be obtained with a superhet; the selectivity in this curve being 7.5 kilo-cycles.

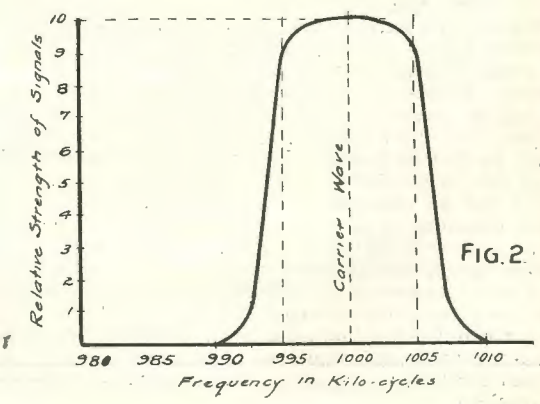

FIG. 2.

It will thus be seen that a receiver having the tuning system so designed to be highly selective without maintaining the required flat top resonance curve, will be unsatisfactory for broadcast reception

on account of the cutting out of the high notes and their harmonics. The problem then is to design the tuning system so that it will respond to the whole band of frequencies fairly efficiently and yet be sufficiently selective to receive distant stations the frequency or wavelength of which is fairly close to that of the local.

To be able to attain this, the use of coupled circuits seem to be imperative, but the increased tuning difficulties and lower signal strength have undoubtedly been controlling factors limiting its general use. Following, are other points which have a direct bearing on the selectivity of the tuning system used:—

(1) Plate impedance of detecting and preceding valves.
(2) Method of gaining rectification, whether by the grid-leak method or anode rectification.
(3) Design of aerial.
(4) Coil impedance.

It is seen then that one of the only ways to eliminate the interfering station is to buy or make a costly superhet or a loose coupled job—the latter method having extra valves to make up for the loss of signal strength due to the very loose coupling that would have to be employed. Then again, we must not forget that simplicity is a big advantage with the direct coupled methods of tuning and from which the listener obtains the greatest volume with the least number of valves. Further, it is good to know that we in Queensland have only one station that interferes with distant reception, which means that only one band of frequencies have to be eliminated. This offers an ideal opportunity for the effective use of a wave-trap. It must be clearly understood that a wave-trap does not tend to alter the inherent selectivity of the tuning arrangement of the set but simply absorbs a well defined waveband.

In the design of wave-traps, many points must be considered which may be sumarised briefly as:—

(1) Simplicity of design.
(2) No re-tuning.
(3) Non-interference to the tuning of the set.
(4) Limited absorbtion of frequency band.
(5) Non-critical adjustment.
(6) Unaffected by type of aerial, etc.
(7) Low Loss construction.

Wave-traps may be divided broadly into four well defined types, namely—Absorption Types, Parallel Rejector Types, Acceptor Types, and Series Rejector Types. Before going into the details of these traps, it may be interesting for the reader to know the conditions under which these traps were experimented with, so that he may be able to pick the most suitable trap for his particular need. Most of the traps were tried out at the writer's residence, located about three-quarters of a mile (direct air-line) from 4QG. The receiver used was a 5-valve S.T.34 circuit, variometer tuned, having three stages of resistance capacity audio-frequency amplification, attached to a well designed two-wire inverted "L" aerial, 66 feet long and about 40 feet high, but with a purposedly added lead-in of a length equal to that of the aerial; the whole forming a very poor arrangement to tune accurately.

The first method upon which experiments were conducted is the system shown in fig. 3, which is not exactly a wave-trap, and consists of a coil, L, shunted by .0005 mfd. condenser C, the whole being connected across the aerial and earth terminals of

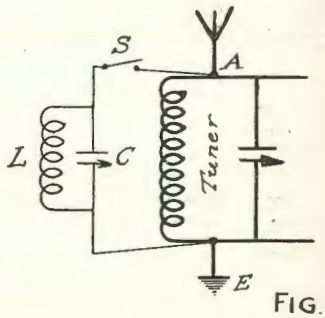

FIG.3.

the receiving set. The effects of this arrangement is actually to increase the selectivity of the circuit, and the proceedure for use is as follows:—

With the switch, S open, the wanted station is tuned in as loud as possible, then S is closed, and an adjustment of C made until the interfering station is eliminated. The disadvantage found with this method is that with every adjustment of the set tuning a new adjustment must be found on C. The results obtained were not very encouraging, and it was found that a straight-out loose coupled system was far superior, taking everything into consideration.

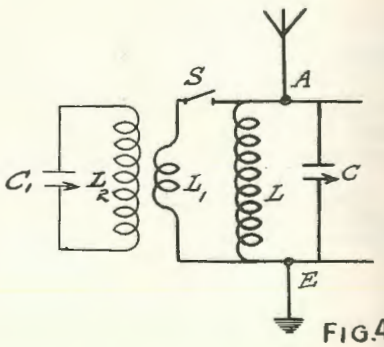

FIG.4.

The first straight-out trap system employed was that shown in fig. 4, which is a modification of fig. 3, and which undoubtedly has possibilities. Here we have coil L shunted by a condenser C, forming the aerial tuning system of the receiver, across which is connected the coil L1, wound over coil L2, that is, they are magnetically tightly coupled to each other. Coil L2 consists of a greater number of turns than L1, and is shunted by a condenser, C1. The values are, C and C1, .0005 mfd.; L, 35 turns; L1, 10 turns; L2, 35 to 45 turns. The procedure is to tune L C to the wanted station with the switch S open and then to close S and adjust C1, until the unwanted station is eliminated. The disadvantages with this arrangement is that the tuning is likely to be critical, but some considerable experimenting can be done both on the number of turns of L1 and the degree of coupling between them. While at this point, it may be just as well to mention that the thicker the wire used in the building of these traps the better chances there are of achieving success, and this remark applies even to a greater extent to the series rejector principles.

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(3) A line built by many years of experience with financial strength and a reputation of fair dealing.

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Telegrams: "Mingaywire," Sydney.

The next and most common type of wave-trap is that of the series rejector, illustrated in fig. 5. This is a radical departure from the preceding types, and consists in inserting a coil, L1, and condenser, C1, in series in the aerial lead. The circuit behaves to a large extent as a series condenser in the aerial circuit so that when the trap is inserted, the coil, L, forming the set tuning arrangement will have to be increased, a size larger being all that is necessary.

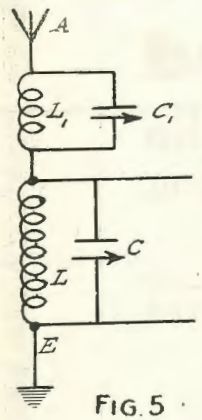


FIG. 5

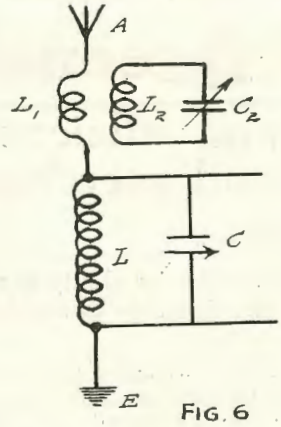


FIG. 6

This arrangement, when suitably tuned, has little effect on the wanted signal as far as strength is concerned, and if anything, acts as a kind of filter also. The lower the impedance of L1 the sharper will be the tuning. The values may be: L, 40 turns; L1, 40 turns; C1, .0005 mfd. The proceedure is to tune in weakly the interfering station on L C and then to tune it out by means of C1. The wanted stations can then be searched for.

Fig. 6 shows a system using coupling in the aerial circuit, but the writer had some difficulty in obtaining correct adjustment, but when once obtained the results were fair. The values used are: L, 40 turns · C, .0005 mfd.; L1, between 5 and 15 turns; L2, 50 turns; C2, .0005 mfd. Coils L1 and L2 are variably coupled to one another by means of a two-coil holder, and the proceedure is to tune as explained in connection with fig. 5; the lowest coupling between L1 and L2 being aimed at. Fine adjustments of C2 gives the required elimination.

THE PRIZE-WINNING WAVE-TRAP

In fig. 7 is seen the circuit used in the writer's wave-trap which gained first prize at the recent Radio and Electrical Exhibition. It has been found by the writer and also many well known enthusiasts, including the Editor of the "Queensland Radio News" and Mr. H. Kington (President of the Wooloowin Radio Club) to be capable of doing some very fine work. The writer does not wish to convey to the reader that this is the best trap to use, because on the contrary, it is quite unsuitable for use with sets using either tight or loose coupled tuning systems. It is undoubtedly very effective in eliminating 4QG at about one mile with a set having a fair degree of inherent selectivity, while on a very well designed receiver, 4QG has been completely eliminated at half a mile and 3LO received at full loud speaker strength. It consists of a centre tapped coil, L1,

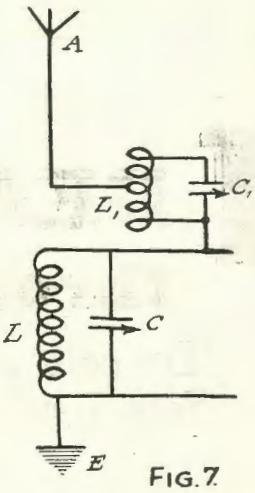


FIG. 7

shunted by a condenser, C1, the whole connected in series in the aerial lead. The coil L1, may be made by winding 70 turns of No. 16 gauge enameled wire on a three inch former and taking a tapping at the 35th turn. The connection should be easy to follow and the procedure in tuning is the same as for fig. 5. The value of C1, .0005 mfd.; C, .0005 mfd.; L, 40 turns.

This trap can also be constructed efficiently from a Lissen 60x coil, the centre tap forming the aerial connection.

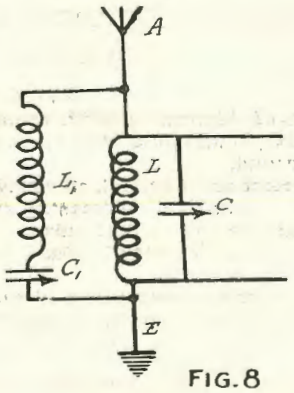


FIG. 8

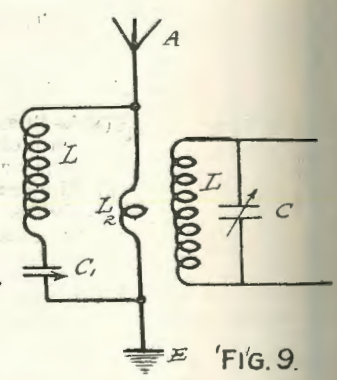


FIG. 9.

The circuit, fig. 8, shows practically that used by the second prize winner at the recent Radio and Electrical Exhibition with the exception that the condenser, C1, is now on the earth side of L1, which is desirable. This trap comes under the heading of the acceptor types, and L1, C1 is tuned to the frequencies of the unwanted station, forming a low impedence path across the tuner, L C. This circuit has been found unsatisfactory because the variations of C1 has a considerable effect on the tuning of the set and vice versa. Tuning is not sharp, and moreover, subsidiary tuning points are obtained which may coincide with the very frequencies that is desired to receive.

Excellent results have been obtained when this type of trap is connected up as shown in fig. 9, going to prove that it is markedly suitable for sets

incorporating the aperiodic type of tuning, that is, with a tight coupled aerial arrangement. The tuning of C1 and C are largely independent. The values used in the experiments were : C1, C each .0005 mfd.; L, 50 turns; L1, 60 turns ; L2, 5 turns.

At the present time, the writer is experimenting on a type of trap shown in fig. 10, and the results to date are very encouraging. It consists of a coil,

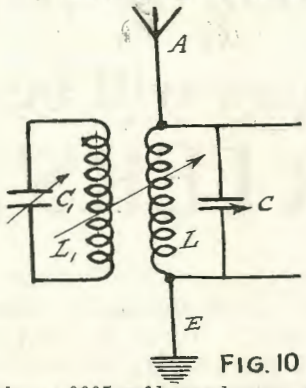


FIG. 10

L1, shunted by a .0005 mfd. condenser, C1; L1 being variably coupled to the tuning coil L, of the set. For experimental purposes, L1 can be an ordinary 25-turn plug-in coil—preferably one having a fair degree of damping so as to broaden the tuning somewhat—mounted with L on a two-coil holder, and the weakest possible coupling used.

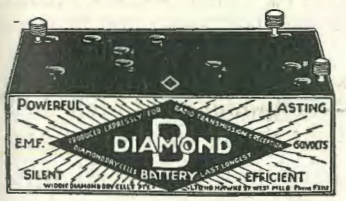
Those who may experiment with this type of trap circuit will find out some interesting peculiarities about coil coupling, best results often being obtained when there is no apparent inductive coupling whatsoever. These and many other effects of a like nature all go to prove the advantages of proper shielding in a receiver not only for the greater stability gained but for the better tone and freedom from extraneous noises. One of the disadvantages with a trap of this nature is that it cannot very well be fitted to an existing set, and really requires the set to be built specially to incorporate it. As near as could be obtained the resonance curve for this trap is almost perfectly regular and there were no noticeable subsidiary effects.

Readers who have become interested in this problem of reducing interference should also turn up an excellent article written by Mr. J. G. Reed, designer of 4QG's transmitter, and published in this journal on April 1st, 1926, Vol. II., No. 3, for further information on this subject.

INDOOR AERIALS.

An excellent indoor aerial, which is capable of working satisfactory at a distance of a few miles from a broadcasting station, can be rigged up in the following manner:—

Paste a piece of tinfoil about 4in. square on the corner of an ordinary mirror, allowing about ¼in. space between the tinfoil and the frame of the glass. To the tinfoil, attach the aerial lead (the wire may be held between the foil and the glass if desired) and connect the other end of the receiver in the usual manner.



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B—	60 Vt. Large Type 10½ x 7	27/o
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LISTEN!

Xmas will soon be here

My Headquarters will be

McWHIRTERS'

SANTA CLAUS always makes McWhirters' his headquarters, because it is so big and he can pile in so many "good things." He is in a big hurry this year to get things going early, because he has so much to do and the few weeks between now and that morning of delight—Xmas Morn of 1926—will simply fly past.

Already huge cases have arrived at McWhirters' Emporium, all packed tightly with glorious Toys—Dolls and Tea Sets, Mechanical Toys, Games, Cricket Sets, Fur Toys, Barking Dogs, Toy Pianos, etc.—and, oh, yes, those beautiful Miniature Cars, Scooters, Rocking Horses, etc. Well Father Xmas remembers the rush there was last year, and how so many little hearts were disappointed, so he sends forth an urgent and most important message to every little boy and girl to help him and to tell their papas and mammas what they want right away.

McWhirters' will be pleased to hear what every little boy and girl wants and to have Father Xmas hold them in readiness in the Big Bulk Store, FREE.

A VISIT TO McWHIRTERS' TOYLAND WILL HELP YOU TO DECIDE.

LOCATION, OFFICE FLOOR.

McWHIRTER'S

The Valley, Brisbane

"Fizzical Kulture" a la Radio

An Early Morning Episode in the Household of the Smiths—of New Farm

(By "A.T.B.")

John Bruce Smith awoke at 6.30 a.m. to the strident note of his Big Ben. Sleepily he reached over, threw the bell out of gear, and sank back on to his pillow. Who on earth set that confounded alarm—and why?

Then he remembered. Why, it was Wednesday! The morning when the household rose half-an-hour earlier to improve their health (and mother's figure) per medium of 4QG's physical culture session.

"C'm on, Mary," he called, "fizzical jerks this mornin'."

In an instant he kicked back the bedclothes, revealing a pink and blue pyjama-clad figure sorely in need of flesh-reducing exercises. Slowly he rolled out of bed—the sixteen-stone thud setting the "September Morn" print on the wall a-jigging in its frame. John Bruce Smith made a very poor impersonation of this masterpiece of art as he stretched, yawned and scratched his head before the wardrobe mirror.

A neat blue night-cap peeped daintily above the counterpane. The clarion call of Big Ben had failed to rouse Mary (John's better half) from her innocent slumbers.

"C'm on, Mary," he called." Fizzical jerks this mornin'. Up now—while I go and wake the kids."

Mary opened one drowsy eye. "I don't think I'll bother this morning, John, dear," she said.

"Oh yes, you will," answered her lord and master. "The idea! How can you expect the kids to do their exercises with their mother a-snorin' in her bunk? Besides, you're carryin' a stone or two you could well afford to lose. C'm on, now—shake a leg—like a good girl."

Mary shook a leg, and muttering something about "a lot of rubbish," tumbled out, while father shuffled along the hall-way, calling and in some cases dragging his six offspring from their cosy nests.

None of the noble family—excepting father—seemed particularly attracted with this early rising idea. Young Walter, aged 11 years, the second eldest of the clan, was most emphatic. "Huh! who wants fizzikal jerks—they give a man the backache. Anyway, a man gets enough of that tripe at school."

"No lip, young feller-me-lad," commanded his father. "You get those pants on, and be out in the breakfast-room in two minutes, or I'll want to know why."

By six twenty-five the family had assembled in the breakfast-room. Father in his flannels, mother in her kimino, Georgie, Walter, Mary, Willie, Jean and little Bruce in their usual knock-about clothes.

Father ordered them into line like a true army general. "Now listen to the instructor, and do just exactly what he tells you," he said as he switched the set on.

Bravely the battalion faced the loud speaker in "steps and stairs," and stood like good soldiers awaiting orders. The clock in the dining-room struck six thirty. Father coughed.

"Funny," he said, "the engineer must have slept in."

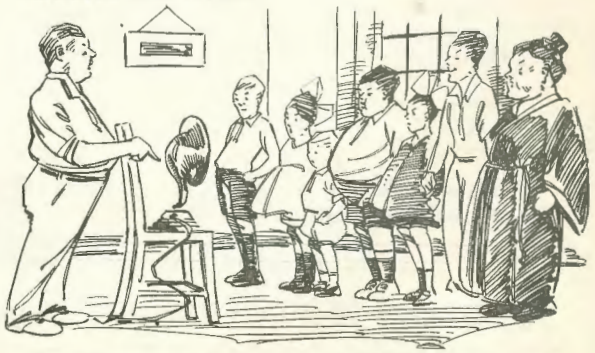
Another minute passed. "I think I'll ring 4QG up," said father. A chuckle issued from Willie's anatomy. Father glared along the line. "Well," he roared, "see anything funny to laugh at?"

"No—only the aerial switch is off—that's all. Wow—oh—wow! Hey, Mum, Walter's pinchin' me."

"Walter, behave yourself!" yawned mother.

"I'll pinch yer," muttered Walter. "Yer blinkin' angora, what did yer wake him up for?"

Father had thrown over the switch, and the instructor was explaining the first exercise. Nobly did the family do as they were bid. Blowing and puffing, Pa, Ma, and the family bent and twisted, stretched and turned.



"Bravely the battalion faced the loud speaker."

"Leg's bend!" ordered the instructor. "Sit right down on your heels."

Mother lost her balance, and sat flat on the floor. The youngsters roared as father rushed to her assistance.

"The youngsters roared as father rushed to her assistance."

"Trunk forward bend," was the next command. "Try to touch your toes, at the same time keeping the back well arched."

Mother couldn't pass the half-way mark. Father found it a little difficult, too, so he turned his attention on the children.

"Do you call that archin' yer back, Walter? You look more like a bloomin' camel than anything else. Bend right over and touch your toes."

With father standing over him, Walter had to obey. "Pop" went two back trouser buttons, and Walter made a wild grab in the nick of time.

"Hey, dad, yer can't expect a man to do fizzical jerks and hang on to his rammies."

"Well, hang on to 'em, and try," said Pa. "Yer needn't think yer can dodge me."

"Trunk circling," commanded the loud speaker. Mother began to do the "corkscrew dive."

"Look here," said Pa; "the instructor says to move the trunk only—not the whole business."

Ma took a deep breath, preparing to give him a piece of mind, but made a sudden dive to the kitchen instead. An aroma of burnt porridge filled the air, and the faces of the family fell.

"There goes our brekker," said Walter, still hanging on to his trousers.

"Never mind your breakfast," said Pa bravely; "keep your mind on your exercises."

By the time the session had finished the family was in a state of collapse. Pa's face was like a beetroot, while Ma fanned herself with a newspaper. The kids had flopped down on the floor.

"Great exercise," said Pa, as they sat down to the burnt porridge. "It might make yer a bit puffed, but it does yer good. I think we'll all look forward to next Wednesday morning."

Huh!" muttered Walter, as he tied his braces around his waist. "If I knows anything about it, the blinkin' batteries will be flat next time. A man can easy fix that."

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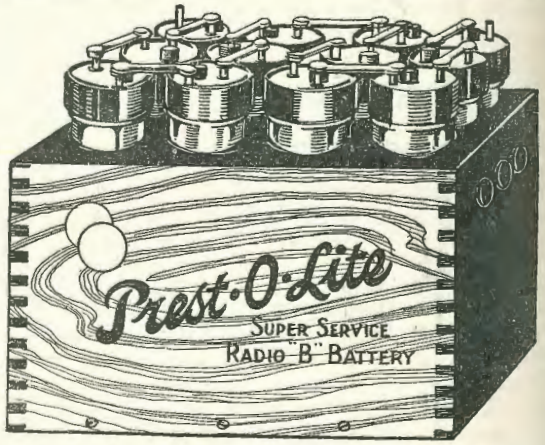

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4QG's Director is at present enjoying a well-earned holiday. During Mr. Robinson's absence the managerial chair is being occupied by Mr. F. W. Stevens, chief engineer.

When asked the other day how he intended spending his vacation, Mr. Robinson said: "Well, I'm going to spend the first day taking my car down —and the remaining thirteen days putting it together again!"

Mr. D. E. Brims, of the Brims Three-Ply Factory at Milton, and who is also keenly interested in aircraft design, claims that his son was the first radio experimenter in Queensland. Mr. Brims, junr., owned an experimental station at Mareeba, N.Q., in pre-war days—long before the valve was ever evolved. Spark coils and crystals were the vogue in those days.

Mr. Alex. Robinson, editor of the "Daily Standard," is now an ardent radio fan. He finds the concerts most entertaining, that is, of course, when he has the time to listen to them. He was heard to remark the other day that wireless never sounds so sweet to him as at 6.30 of a Wednesday morning when, from his bed he hears 4QG's Physical Instructor drilling his two young lads.

Major Joss, director of C.C.M.'s radio department, is at present on a five-weeks' business trip through North Queensland. Mr. Bert Thomas is accompanying him.

Mr. Chas. E. Forrest, managing director of the International Radio Co., Ltd., of Sydney, was recently in Brisbane on a short business trip. He called in to see us and had quite a lot of interesting things to say about radio generally. This is Mr. Forrest's first visit to Queensland.

Mr. Bert Miller—well known for his morse class at Underwood's College—has constructed a short wave transmitter, and with a call of 4HL will shortly be heard on the air. Bert is an old A.W.A. marine man.

Messrs. Russell Roberts and Bobby Langford, two members of the Tivoli operatic orchestra, are now keenly interested in short wave reception. Maybe they find the ta-tata-ta quite a respite from listening to music on broadcast wave-bands.

Look out—you DX pirates. The Radio Inspector is on the air with his short wave transmitter. His call is 4ZA. Mr. Armstrong will sure make the ideal traffic cop of the ether.

Alderman Watson, who resides at Toowong, one of the reverend City Fathers is now twiddling the dials of a handsome eight-valve receiver. It has been reported from several reliable sources that the alderman has been successful in logging 4QG at good loud speaker strength on more than one occasion.

Mr. Arthur Jackson, of the Queensland Division of the Wireless Institute, is at present in Sydney on institute duties.

Mr. Wilson, junr., of Wilson Nafis Ltd., has joined in experimental work with 4CM in renewing filaments in transmitting tubes. So far the results have been most successful. It is not known whether the treatment is carried out on the monkey-land principle or not. Suffice it to say that Tom Elliott is kept busy mending filaments and restoring joy into the hearts of distracted hams.

Mr. M. A. Prudence, a well known amateur, has been commissioned to fill the op's chair on the stranded "Cooma." He relieves Mr. Chas. Runge, who has been called back to Brisbane on business.

4QG is now the "early bird" of all the Australian broadcasting stations. A vote was recently taken among followers of the physical culture session as to whether 7.0 a.m. or 6.30 a.m. was the better hour to commence the session. The earlier time won by an overwhelming majority—only two or three votes being received in support of the original 7.0 a.m. idea.

The old phrase "full many a flower is born to blush unseen and waste its sweetness in the desert air"—could hardly be applied with any degree of accuracy to some entrants in the Radio voice competition now being conducted from station 4QG. To date no Melbas or Carusos have been unearthed, and the opinion of listeners generally is that the old favourites on 4QG's programme stand head and shoulders above the new blood. Perhaps it's a case of "Mike Fright."

We were told recently of one enterprising entrant in the Radio Voice Contest who made a bold bid for victory by buying 300 copies of "The Daily Standard" and placing the cross in the square opposite the name of the man whom HE considered to be the best in the section. He deserves to win.

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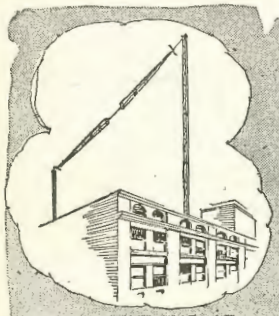
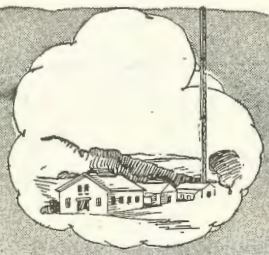
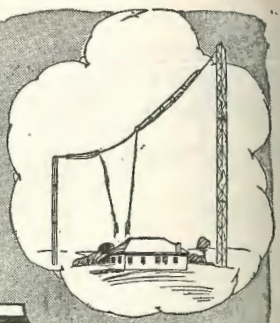
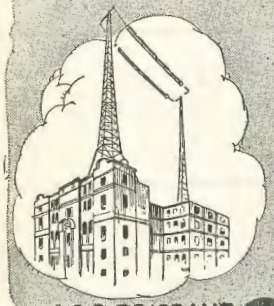
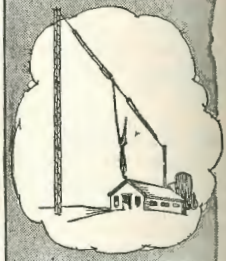

3A.R. MELBOURNE

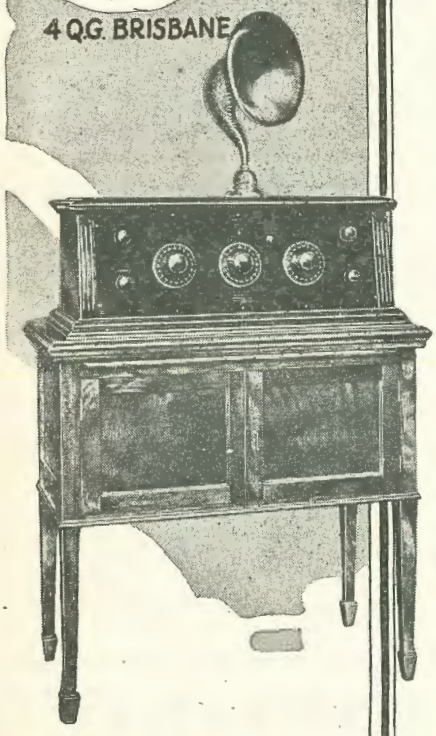

2K.Y. SYDNEY


2F.C. SYDNEY


3LO. MELBOURNE


4Q.G. BRISBANE


2B.L. SYDNEY



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Lay Australia at your finger-tips.

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Yet this is so. Nightly, owners of "UDISCO" Radio Receivers—without stirring from comfortable homes—are accomplishing what to Flinders entailed many weary days of hunger and privation.

All "UDISCO" Sets, whether "Eights," "Sixes," "Fives," or "Three," are built to a standard of excellence in efficiency and design never before equalled in the world.

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The "Capacidyne" circuit employed ensures reception of Stations operating on any wavelength between 20 and 2000 metres. This circuit—a purely Australian invention—gives selectivity, volume without distortion, superlative tone quality and ease of control.

Tuning dials synchronise—wavelengths are controlled with one switch—volume by another.

Housed in full polished cabinets of pleasing design, "UDISCO" Receivers are masterpieces of craftsmanship.

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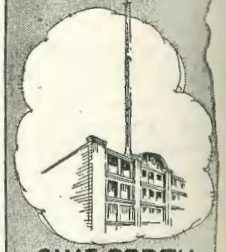
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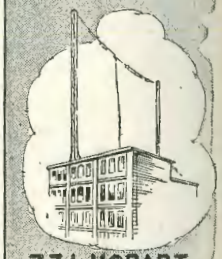
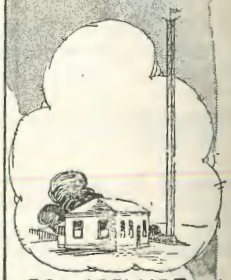

7Z.L. HOBART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Mr. James P. Quam, who is recognised throughout the whole of the United States as one of the leading Engineers in all Radio production, visited Australia last year to consult with the United Distributors Ltd. on the production of Radio Sets that would be entirely satisfactory for all Broadcast reception purposes throughout Australia, and the result of his work, combined with that of the Engineers of the United Distributors, has resulted in their superlative "UDISCO" type Sets.

Mr. Quam, however, was not satisfied that any of the Loud Speakers available in Australia were giving satisfactory reproduction, and bent his inventive mind and whole energies towards producing something absolutely superior to the others, and satisfactory in all respects. The QUAM SPEAKER is the result.

One of the essential differences of the QUAM from all other Speakers is a Silver Drumhead Diaphragm of 3/1000 inch thick that not only faithfully reproduces every articulation of the human voice, but also gives a musical tone that cannot be equalled by any other Speaker on the market today.

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Single Valve Set, complete with all accessories, including loud speaker £8
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Some October Features from 4QG

On the evening of October 1st a novel transmission is to take place from 8 p.m. until 9 p.m. from the basement of Messrs. Allan and Stark, Ltd., to commemorate the opening of their new grocery section. Dance music and vocal numbers are to comprise the programme.

On Saturday, October 2nd, the State banquet tendered to the Empire Parliamentary Delegation is to be broadcast from Parliament House, commencing at 8 p.m. Speeches, vocal and orchestral music will comprise the programme.

The proprietor of the new Hotel Carlton is entertaining a group of 4QG artists, also the announcer and staff in the Carlton drawing room lounge on the evening of Tuesday, October 5th. The full evening's transmission is to be broadcast from this hotel.

The longest land-line transmission yet attempted by 4QG is to be broadcast on Saturday, October 9th, when the final session of the Wide Bay and Burnett Musical Festival will be heard. This entertainment is to be relayed from Nambour, and will commence at 7.45 p.m. Bundaberg, Maryborough, Gympie and Nambour choirs will be heard in contest numbers.

For those with a streak of salt in their blood, Friday, October 15, promises to be of especial interest. Nautical vocal and instrumental music will be the feature of the evening. A short lecture on "The Mercantile Marine in War Time" will be given by Mr. F. W. Stevens, commencing at 7.45 o'clock.

On Saturday afternoon, October 16th, the Nambour Rural School Fete will be broadcast from 2 p.m. to 3 p.m., followed by a programme of music from the studio.

On Wednesday, October 20th, a portion of the recital given by the Misses Todd from the Albert Hall, commencing at 9 p.m., will be broadcast.

The Silkstone Apollo Club, a fine choir from Ipswich—is to give the full programme in the studio on Monday evening, October 25th.

On Thursday, October 28th, the Sandgate Methodist Choir is to give another of their splendid concerts. The entertainment will be given in the studio and will commence at 8 p.m.

October 29th is to be "Digger Night" at 4QG. A good programme is being arranged and should find much appreciation among listeners.

Wireless Aerials

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

G. H. BUSBY

Lily Street, Stones Corner, South Brisbane

The Man Before the Mike

An Interesting Interview with the Announcer at Station 4QG

Peeps into Studio-land always hold a certain amount of interest to radio fans, and thus we feel that the following little chat with Mr. C. V. Woodland, Station 4QG's announcer, will be appreciated by our readers.

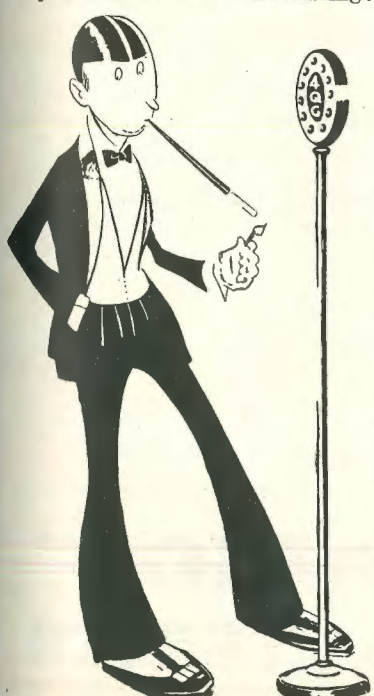
"Good afternoon, Mr. Woodland," exclaimed our representative as 4QG's announcer stepped from the elevator towards 4QG's imposing entrance. "I wonder if you could spare me ten or fifteen minutes?" He then explained his mission.

"Certainly," replied Mr. Woodland, glancing at his watch. "We have exactly fifteen minutes—for you know we start transmitting at 3.30, and it is 3.10 now."

"Now—what are you going to title this article?" he asked as he motioned our representative to a comfortable lounge chair in the reception hall. "Confessions of a broadcasting announcer?"

"Ah, nothing quite so severe," was the reply. "We'd simply like you to give us a few of your impressions, experiences and opinions regarding the duties of a broadcasting announcer. For instance, do you find the work interesting?"

MR. C. V. WOODLAND,
Announcer at Station 4QG



"The Man Before the Mike"

"Yes, I do," replied Mr. Woodland,, "and I'm very glad you used the word "work" there, for although the listener may not think it, a broadcasting announcer has his hands full right from the minute the programme starts until the closing bars of the "National Anthem." Not only has he to announce the numbers, but he must also have the next artist and the music in readiness, or, in the case of orchestras and bands, arrange the members in correct position before the microphone in the big studio, while an artist is rendering his or her solo in the small studio. He must also enter up in the station's log book, the title, composer's, publisher's, and artist's name. These particulars are required for copyright purposes.

"Yet your announcements are always prompt," our representative observed.

"Promptitude is one of 4QG's virtues," smilingly replied Mr. Woodland. "We do not believe in keeping our listeners waiting one second longer than is necessary.'

"Items broadcast from two studios alternately would, under average circumstances, give cause for delay. The convenient location of the two studios enables me, immediately upon the conclusion of one item, to step up to the microphone, announce the following item, and switch that studio off the air. A few quick step brings me to the second studio, which is immediately switched on to the air, and a silent signal is given to the waiting artist and accompanist to proceed."

"You have a responsible position, Mr. Woodland," our representative remarked.

"Yes, I daresay it is, in a sense; one has to be so careful of both articulation and pronunciation. One little slip, and there are thousands always ready to 'pick one up.'"

"Correct pronunciation is an absolute essential," he continued. "The influence of an announcer's mode of speech is said to exert a vast subconscious influence upon listeners, particularly children. English at any time is a difficult language, and there are many words pronounced daily by people of education that are contrary to that laid down by Webster."

"It is common knowledge that there are several pronunciations to many English words, all of which are, in a measure, correct. Different colleges and universities teach various pronunciations, so that you will see the difficulties that an announcer is sometimes up against."

"It might be interesting to mention that in England there has been appointed a Board of Advice under the chairmanship of the Poet Laureate. This body, consisting largely of learned men, meets frequently to discuss the correct pronunciations of English words. Their decisions are published in the official

organ of the British Broadcasting Company, copies of which journal we receive at 4QG. I propose to adopt the pronunciation decided upon by this Board of advice at an early date."

"Does the pronunciation of musical composers and foreign titles ever present difficulty to you?" our representative asked.

"Well," replied Mr. Woodland, smiling, "some of them do make one think. Foreign pronunciation is altogether different from English pronunciation. A reference book on this subject is kept in the studio, and is constantly referred to. Therefore the pronunciation of such names over the air from 4QG may be taken by listeners as being authentic."

"I think the most difficult words I ever had to pronounce since announcing at 4QG," continued Mr. Woodland, "were the titles of some of the Welsh music, recently broadcast from 4QG by the St. David's Society. What with the double "y's" and double "l's," it required considerable effort on my part to prevent my tongue from becoming knotted. Welsh is a most peculiar language to pronounce, and I really think you need a Welshman's tongue to speak it correctly.'

"Are you given an opportunity to glance through such matter as the news service, etc., before you announce it over the air?" our representative asked.

"Sometimes," replied Mr. Woodland, "but more often than not it is sight-read. The rough printers' proofs from the newspaper offices are frequently rushed up to the studio, and by the time they reach me the news service is due to be broadcast."

"Smudged proofs are common; even misplaced lines have occurred, and a man has to be most alert and careful when reading such matter."

"I daresay you have a little fun now and again in the studio?" our representative asked.

"Oh, yes," was the reply. "Frequently something happens that provides a bit of amusement. Not so very long ago I was telling a very nervous young lady just where to stand before the microphone. The studio signal was switched on, signifying that she was "on the air," when she turned around and asked "Am I right?" When she knew her question had gone over, she ran out of the studio in fright, and it took quite a while to coax her into the studio again.' '

"Of course, Mr. Woodland, it is general knowledge that you are none other than the famous Uncle Jim," our representative asked.

Mr. Woodland smiled as he blushed up. "I'm afraid the question has been the subject of quite a few wagers, but I suppose I must admit my identity. I love children, and my happiest hours of the week are when I, with Uncle Ben and Co. talk and sing to the children. If you could only read some of the letters we receive, you would be astonished. Crippled, invalid and lonely children from all parts of Australia write us such wonderful letters, and I tell you some of them carry a heart throb. If I can make such little ones happier, I will feel as though my purpose in life is not altogether an empty one."

"Well," said Mr. Woodland, rising, "my time is up. I must thank you for the opportunity of speaking a few words to your readers, and I hope the few brief answers I have given to your questions will give them some faint idea of the work of a broadcasting announcer."

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

When you buy Willard's you buy Batteries that last for years. Your investment in Battery economy is an investment in better reception, too, for these Batteries are rechargeable. No need to tell the difference this makes in the quality of reception.

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Willard RADIO BATTERIES

How to Repair Burnt-out Phones

Mr. Tom Elliott (4CM) describes an Easy Method of Rewinding Burnt-out Headphones

Most amateurs' junk-boxes contain a pair or two of discarded headsets. Recently I visited one O.M. who had six pairs of 'phones, including Brande's, Brown's, and Sterling manufacture, which had been "dumped" simply because they had "fizzled"—otherwise, the coils had burnt out.

To suggest that these should be re-wound would in most cases bring forth a decisive "can't-be-done," but if you follow carefully the method to be described you will be surprised how simple is the operation.

It is admitted that to attempt to re-wind with the fine 46-gauge wire than the manufacturers use is to impose rather a heavy strain on the naked eye. Such wire can be handled only by an expert.

Most 'phones are wound to a resistance of 2,000 ohms. Using 38 gauge silk-covered or enamelled wire, which makes the re-winding much easier, we obtain a resistance of 60 ohms.

Of course, 60 ohms resistance is far too inadequate for wireless reception, so we must compensate for this drop in ohm resistance by the addition (as a separate unit) of a telephone transformer.

First of all, strip down the 'phones, taking care not to damage the insulation of the bobbins. Should you chance to slip, however, a little shellac varnish and paper will quickly patch up the damage.

Now, place each bobbin in a lathe, and wind with the 38-gauge wire, taking care to wind each coil in the same direction, and to join the beginning of the coils together carefully.

The beginning of the winding on each bobbin should be joined together, the finishing end going to the terminals of the 'phone.

The re-winding of the 'phones now being complete, we can now turn our thoughts to the construction of the transformer. The transformer is designed so as its primary winding is 120 ohms., which is equal to the resistance of the two newly-wound 'phones. The secondary resistance of the transformer is between 5,000 and 8,000 ohms.

An ordinary "Ford" ignition coil is suitable for the transformer when the primary is re-wound with 38-gauze covered wire. Wind enough wire until the winding space allows the coil to be placed back in position.

It is advisable to test the resistance of the 'phones, which should be placed in series, and with the use of a 2-volt battery and a milliamp meter the deflection of the needle should be checked, and should indicate the same deflection as when the finished primary of the new transformer is connected in the same manner as the 'phones.

The writer once used an ordinary inter-valve transformer in place of the Ford ignition coil. In this case the primary winding of the inter-valve transformer was burnt out, and was re-wound with 38-gauge covered wire. This method was found to be quite effective.

If the experimenter has more time, and is interested in this direction of the telephone transformer, I offer the specification of a design which is used commercially.

The telephone transformer may be made by taking a core of soft iron wires and winding two layers of insulated wire on it. The core may measure 9 inches by ½ inch diameter, the size of the iron wire forming the core not being material.

Two checks, each measuring 2½ inch by 2½ inch, fit on to an ebonite tube, having an internal diameter of ½ inch, the total diameter being slightly more.

A portion of the core will project out of each end of the tube. On the tube is wound a low-resistance winding consisting of 750 turns of 38-gauge covered wire. A layer of insulating cloth is now put on, and a high-resistance winding, consisting of 16,000 turns of No. 42 covered wire is then wound. The projecting end of the core may be now bent around to meet one another, so as to form a closed magnetic circuit.

At the present time I am using a pair of re-wound 'phones, and find that they render good service. In any case one has the satisfaction of knowing that there is little or no likelihood of them ever burning out.

Crystal Users

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

Loud Speakers—

Spitfire Baby	£1	5	0
Spitfire Junior	1	17	6
Amplion AR38	3	0	0
B.T.H. C1	4	10	0
Meistersinger	5	19	6

'Phones—

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

Glass enclosed Barrel Detectors, 3/6 each.

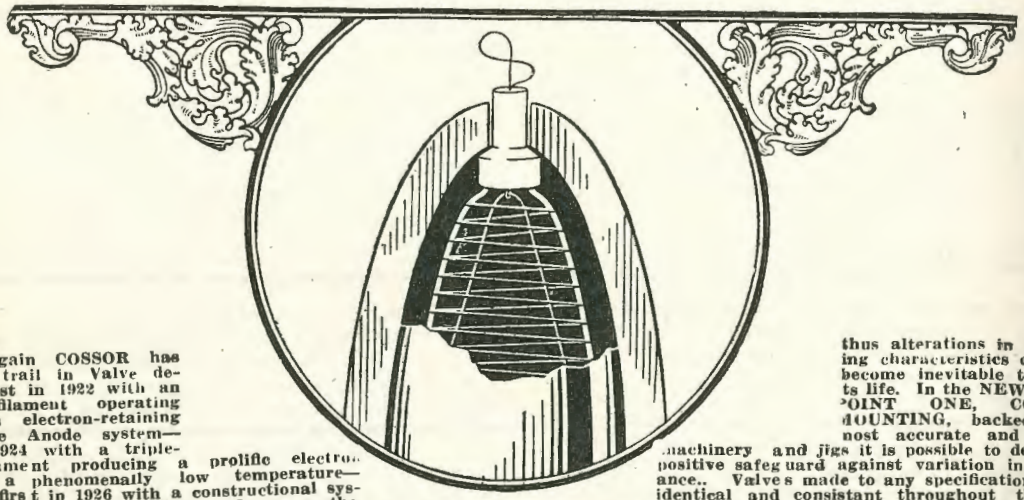
J. T. Greenlees & Co.

Albert House, Ann Street, Brisbane

(Round the corner from the Tivoli Theatre)

A Great Improvement in Valve Design

Filament, Grid and Anode are now secured at top and bottom in the new Cossor Point One.



Once again COSSOR has blazed a trail in Valve design. First in 1922 with an arched filament operating within an electron-retaining hood-shape Anode system—first in 1924 with a triple-coated filament producing a prolific electron stream at a phenomenally low temperature—and now first in 1926 with a constructional system which automatically aligns and secures the filament, grid and anode at the top as well as at the bottom. **The ONLY VALVE IN WHICH THE ELEMENTS ARE FIXED IN THREE DISTINCT POSITIONS.**

The principle of Co-axial Mounting is not new. In fact, it has been the ultimate goal of every valve manufacturer since the invention of the three-electrode valve. But for years the difficulties proved insurmountable until COSSOR—by reason of the peculiar advantages afforded by the hood-shaped Anode—was able to perfect a method sufficiently robust and accurate.

Co-axial Mounting ensures greater uniformity.

The COSSOR system of Concentric Mounting possesses far-reaching advantages. In the first place, it ensures absolute uniformity of characteristics for all valves made to a certain specification. Experienced wireless enthusiasts know that in the past—in spite of the most critical manufacturing supervision—it has been difficult to prevent variations between valves of the same class. Two valves—identical to the eye—might give varying performances owing to minute differences in the spacings of the internal elements. Even if complete uniformity were possible in the factory, the wear and tear of everyday use causes changes in the relative positions of the filament, grid and anode. And thus alterations in the working characteristics of a valve become inevitable throughout its life. In the NEW COSSOR POINT ONE, CO-AXIAL MOUNTING, backed by the most accurate and sensitive machinery and jigs it is possible to devise—is a positive safeguard against variation in performance.. Valves made to any specification must be identical and consistant throughout the whole period of use—variation is impossible.

THE SUPREME IMPORTANCE OF THIS WILL BE AT ONCE OBVIOUS TO USERS OF NEUTRODYNE AND "SUPER-HET" RECEIVERS EMPLOYING TWO STAGES OF MATCHED HIGH FREQUENCY AMPLIFICATION.

Sectional view of the elements in the new Cossor Point One

In the above illustration a section of the Anode is cut away in order to expose the grid and the filament. Observe the seonite insulator which securely holds in position the grid and the anode. To all intents and purposes this insulator becomes an integral part of these two elements—the slightest individual movement of either of them is quite impossible. Through the centre of the insulator is passed the fine wire which retains the filament in position. Thus — come what may—even the hardest shock cannot disturb the exact relative positions of the filament, grid and anode.

Tests prove a great increase in life.

A further tremendous advantage of this new system of construction lies in its shock-proof filament support. Whereas in many valves the filament, being straight, is retained under tension and is therefore subjected to considerable mechanical strain, that used in THE NEW COSSOR POINT ONE is arched and retained in position by a fine wire passing through a seonite insulator.

It is not kept under tension, and the sole object of the fine wire support is to hold the filament in position and to permit the slight elasticity necessary should the valve be dropped or otherwise subjected to accidental rough usage.

A series of tests—far more rigorous than any conditions under which the COSSOR POINT ONE would normally be used—has proved the complete efficacy of this new shockproof filament system. A concussion which caused an immediate fracture of the filament in an ordinary valve was easily and harmlessly absorbed by the filament in the Cossor Point One.

TYPES AND PRICES:

PLAIN TOP. For Detector and Audio 1.8 volts .1 amp.	13/6
RED TOP. For Radio Frequency use 1.8 volts .1 amp.	13/6
The new Cossor Stentor Two GREEN TOP. Power Valve 1.8 volts, .15 amp.	17/6

The new Cossor Point One

Red Top: For H.F. use, 13/6.
(Consumption .1 amp.)
Plain Top: For Detector, 13/6.
(Consumption .1 amp.)

The New Cossor Stentor Two

Green Top: For power use, 17/6.
(Consumption .15 amp.)

All operate at 1.8 volts.

All consume only 1-10th of an ampere

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OBTAINABLE FROM ALL RADIO AND ELECTRICAL DEALERS.

The New Cossor Point One

The new Dull Emitters with the long-life .1 amp. filament.

Factory Representutive and Sole Agent for Australia. **A. H. CARTER, 20 Clarence St., Sydney, N.S.W. 'Phone BW6992**

"Q'ld Radio News" Now Read in Japan

"Good news travels fast"—they say. It would seem that it also travels great distances, when the following facts are taken into consideration:—

During last month we received correspondence from no fewer than six countries outside the Commonwealth of Australia.

These included England, Germany, Canada, Japan, New Zealand, Hawaaii. Some of this correspondence referred to advertising contracts, the remainder being subscriptions to the "Queensland Radio News."

The letteer from Japan was particularly interesting. It read:—

"Queensland Radio News" Publishing Office.

Gentlemen,—I want to subscribe to your "Queensland Radio News" and "Broadcast Bulletin." Please send out me by turn your "News" and "Bulletin" as fast as you can. And please reply me the subscription to your "News" and "Bulletin" one year for Japan (including postage). If you do so, I will remit money by post office money order at once without fail, as soon as I can. I could receive on the wavelength 390 metres of 7ZL at Hobart, Australia; 371 metres of 3LO at Melbourne, at Australia; 353 metres of 2BL at Sydney; 370 metres of KZRQ at Manila, Philippines; 400 meters of 2FV at Bombay, India; and 425 meters of 5AF at Calcutta, by loud speakers with 5 tubs set every night. At present time I am a only public DX record holder in all Japan. If you want my contribution on your "News" and "Bulletin" I will send you free my manuscrip and any photograph in radio circle of Japan by turn. There are great intimate connection among to Australia and Japan to exist on the same longitude. Because, both country are there on the well stand can quite receive the radio broadcast with each other. There are large audience of Japanese radio broadcast (375 meters Tokyo, 385 meters Osaka, 360 metres Nagoya, 395 metres Dairen) in your country at present time. I want to publish all kinds of radio in Japan for log-distance dear friends by your "News" and "Bulletin." I am thinking it to not useless for progress in radio and for to raise of national intimacy to among both country. If you wish the Japanese radio magazine, I will send you free by turn, and I will translation these illustration exposition and some principal article. I have heard of your address and name from "Broadcasters Sydney Limited" (4QG?) in latest. I am waiting at any late from your yearning report and your profitably "Queensland Radio News" and "Broadcast Bulletin."

—Yours cordially,

TAKEO KIMIZUKA.

My name, TAKEO KIMIZUKA ASAHI CO.

My address, FUSANO, KAZUSA, CHIBAKEN, JAPAN, near Tokyo. Radio, Tokyo, No. 2416.

Brisbane from Above

There is a definite depth to which a diver may descend, and return alive.

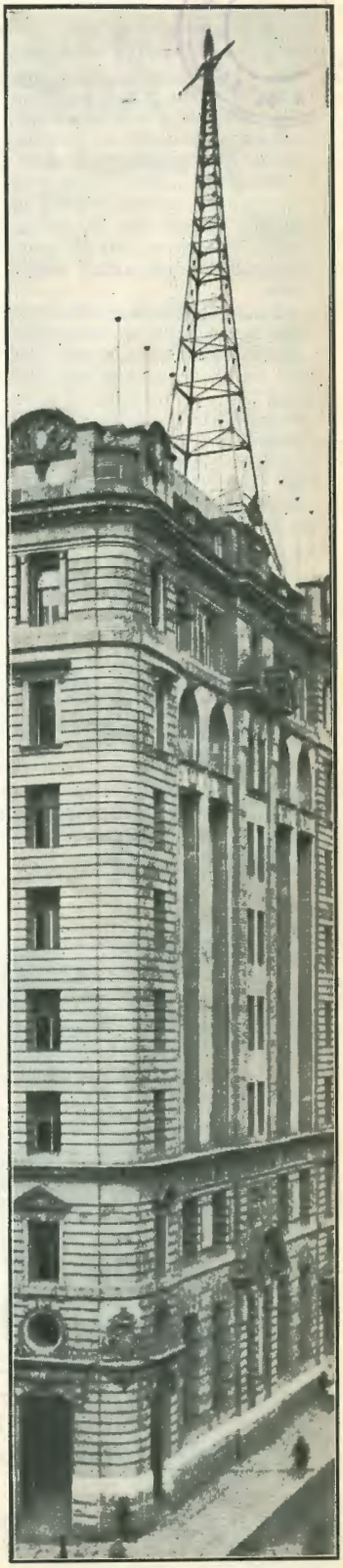
The pressure of the water even a few feet under the surface has an effect on the ears and lungs, and as the depth is increased the heart is affected.

What then is the height to which a steeplejack may ascend? There is no limit, as the density of the air does not become dangerously thin until a much greater altitude is reached than that of any building in the world to-day.

4QG's Chief Engineer (Mr. F. W. Stevens) is able to give an interesting account of experiences at an altitude of 220 feet, which is the height of 4QG's aerial towers.

Last week, Mr. Stevens entertained listeners for about 45 minutes with a description of Brisbane from the cross arm of one of the towers. The lecturer traced the history of Brisbane from the days of Captain Cook, Matthew Flinders, and Oxley, until the present day.

He told of the wonderful view that was to be seen from up there. The serpentine windings of the Brisbane River appeared as a wonderful silver ribbon, twining for miles on either hand. The beautiful Botanical Gardens and the



"Daily Standard" Photo

azure blue of the hills towards Toowoomba and onward to Warwick; the steamers at the wharves, and the chimney of the Pinkenba Meat Works. The people in the street and the ever-busy Victoria Bridge all received their share of attention. Motors in the street appeared as so many huge beetles, and the people as a colony of ants.

Looking down from the top of the tower with the whole city and environs at one's feet would certainly cause one to think of the time when scrub grew in Queen street and wonder what the old pioneers would think could they see Brisbane of today.

Mr. Stevens remarked in conversation the other day, that without exception, everyone who heard of the novel transmission remarked "he could have it all on his own." "They do not know what they miss, and there is no special nerve necessary," Mr. Stevens affirms, but reference to the accompanying photograph makes one doubt if this is the case.

"Climbing the first two or three spans seem to be the worst," Mr. Stevens asserts, "but after that the spans are not so wide and give a ladder effect, enabling the top portion of the tower to be climbed with ease."

The cross arm is 19 feet long and about 18 inches wide in the centre, where Mr. Stevens declares, "there is plenty of room to move about and make a comfortable seat."

Asked if anything was very noticeable from up there, Mr. Stevens said that apart from the wonderful beauty of Brisbane, the thing most noticeable was the scar in Victoria Park caused by pedestrians walking diagonally across to the entrance by the Ryan Statue. Few know what a pretty park it is unless seen from above, and it seems such a pity for a wide dry track to be allowed right across its face when proper entrances with asphalt paths are provided.

"The Sandman"

Popular Bedtime Story Teller at 4QG.

His mouth organ is only one of several instruments which the Sandman employs to entertain the kiddies.

4QG Radio Programmes

SOME SURPRISING FIGURES.

The average listener very often hears some remark or other passed regarding the continuity of the work entailed in the arranging and organising of programmes from a large broadcasting station. It is not until some figures in connection with programmes are quoted, however, that the enormity of the work becomes apparent.

At Station 4QG during the month of September no less than 211 different artists appeared. This number has not been reached by counting the individual members of choirs or bands, but in making the calculation each concerted number such as a band, a choir, a quartette, and so on has been counted as one performer. The total, 211 artists in the month, really means that seven different artists are to be presented to the public each evening from 4QG.

If the total number of different artists taking part in the September programmes be counted, it will be found that more than 800 different people are to took part. In other words during the month of September alone, one out of every thousand people in Queensland actually took part in the broadcasting programme. For the services of these people the listener pays slightly less than half a crown! Surely broadcasting is indeed the world's cheapest entertainment.

Logging Them All!

on his "AENOLA"

Twelve Month's Unconditional Guarantee

AENOLA Receivers

Cheapest Prices — Best Parts Used

NOTE THE PRICES:

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

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

Loud Speakers from £2 upwards extra.

Demonstrations and Installations Free

NEWNHAM & BARNES

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LOGAN RD. WOOLLOONGABBA

(opp. Johns & Co.) Phone J 4379

The "Selectrosonic" Circuit

A most efficient English circuit which, under test in Brisbane, eliminated 4QG and brought in Southern Music without the aid of a wavetrap

EDITORIAL NOTE.

Early last month we received a letter from Mr. Hanraham, of Reis Street, Woolloongabba, Brisbane, informing us of some remarkable results he was obtaining with a set he constructed himself from particulars supplied in "The Wireless Magazine," dated April, 1926. He claimed that although he was barely two miles from 4QG's aerial he could bring in 2BL regularly without a sign of 4QG or without the a of a wavetrap.

Accordingly your Editor and Mr. T. Elliott (4CM) paid a visit of inspection to Mr. Hanraham's residence one evening when a practical demonstration was given.

We satisfied ourselves that the claim made was absolutely genuine. 2BL's programme of band music could be heard all over the house, and there was not a trace of 4QG in the background.

At Mr. Hanraham's suggestion and with acknowledgement to "The Wireless Magazine," we set out hereunder constructional details of the receiver. Although the circuit originally published consisted of three valves, Mr. Hanraham deemed it advisable to add another stage of low frequency amplification.

The aerial from which this set operates is of the single wire type 40ft. high and 60ft. long.

To listeners who reside within close proximity to a big broadcasting station, the question of interference causes considerable difficulty when in search of other stations.

The simple valve set, with a direct coupled tuning and reaction is now almost useless for long distance reception when the local station is "on the ether." The only solution to the problem lies in the use of a specially designed receiver which, by very small movement of the controls, is capable of cutting out the local station.

Selectivity can most easily be obtained by the use of loose-coupled tuning coils assisted by a single high-frequency amplifying valve. If the internal capacity of the valve is neutralised by a small external capacity, then the tuning is greatly simplified.

The circuit diagram shows that a semi-aperiodic coil is inserted in the aerial circuit, coupled to which is a secondary or grid coil tuned by a variable condenser.

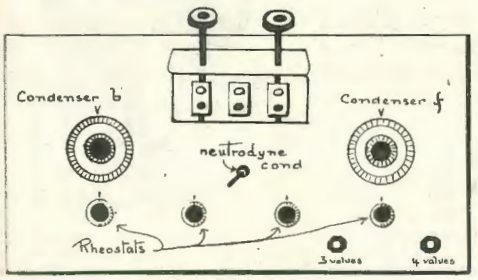


Fig. 1.

NEUTRALISED CAPACITY.

The oscillations received in this circuit are amplified at high-frequency by the first valve, the inter-electrode capacity of which is neutralised by the small variable condenser shown connected between the plate and the grid of the valve.

It should be understood, however, that the use of this small condenser is not essential to the working of the set, and is by way of being a refinement requiring a fair amount of experiment for its correct adjustment.

In the plate circuit of the valve is connected a semi-aperiodic coil, coupled to which is the grid coil of the detector valve, tuned by a variable condenser. A reaction coil connected in the plate circuit of the detector valve is coupled to the tuned grid coil.

All three coils are of the plug-in type, held in a three-way holder, the tuned grid coil being placed in the centre socket with the aperiodic and reaction coils, one on each side respectively.

The third and fourth valves are low frequency amplifiers, transformer coupled.

By virtue of the H.F. intervalve coupling system we have a method of varying the amount of selectivity of the circuit.

Thus the receiver can when circumstances demand, be made highly selective, but when interference from the local or any other station is non-existent, the degree of selectivity can be reduced until the tuning is comparatively flat.

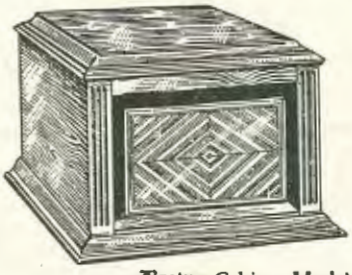
The advantages of such a system are obvious, especially when searching for a distant station where high selectivity during the actual searching is a disadvantage. Once the station has been picked up the selectivity may or may not be increased, depending on the amount of interference experienced.

Due to the special coupling system the radiation from the set when the latter is in a state of oscillation is very small.

A list of component parts for this set is as follows:—

BRITISH **Brown** THROUGHOUT

Brown Q.
2000 Ohms.
£21.



Brown Cabinet Model.
2000 Ohms £8/10/-

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The Incomparable Brown in Seven Superb Models

Now that Broadcasting has awakened such an intense national interest, it is only natural to find that Loud Speakers, in common with many other commodities, Radio or otherwise, must be produced in a variety of types at prices that will be within the reach of all. It is for this reason, therefore, that there are now available seven superb models of **Brown** Loud Speakers.

Of all the Loud Speakers on the market to-day, the **Brown** is unique, because, by a brilliant application of an entirely original principle, it achieves results which can be obtained in no other speaker. **Brown** principles of design and construction can be found only in **Brown** Loud Speakers. The famous tuned reed mechanism, which permits the use of a supersensitive cone-shaped aluminium diaphragm as thin as paper, is responsible for a tonal purity and mellowness which must be heard to be fully appreciated.

Brown H1.
2000 Ohms
£7/10/-

Brown H3.
2000 Ohms.
£4/2/6.

Brown H4.
2000 Ohms.
40/-

Brown H2.
2000 Ohms.
£3/5/-

Obtainable from all Radio Dealers.

Sole Agents:

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(MELBOURNE) Pty. Ltd. (SYDNEY) Ltd.

Melbourne: 495 Bourke Street
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Hobart: 145 Macquarie Street
Launceston: 123a Charles Street

Sydney. 115 Clarence Street
Newcastle: 11 Watt Street.
Brisbane: Perry House, Elizabeth St.
Agent for W.A.: J. R. W. GARDAM, 138 Murray St., Perth.

1 Panel, 10 x 20.
1 Wooden Baseboard, 20 x 6.
1 Bakelite Strip, 12 x 1½.
1 .0003 Variable Condenser.
1 .0005 Variable Condenser.
4 Anti-microphonic Valve Holders.
3 .5 Fixed Condensers.
1.001 Fixed Condensers.
1 .0003 Grid Condenser.
1 2 Meg. Grid Leak.
2 Single Coil Sockets.
1 3 Coil Holder.
1 Neutrodyne Condenser.
2 Audio Transformers.
4 Rheostats.
Terminals, Wire, etc.

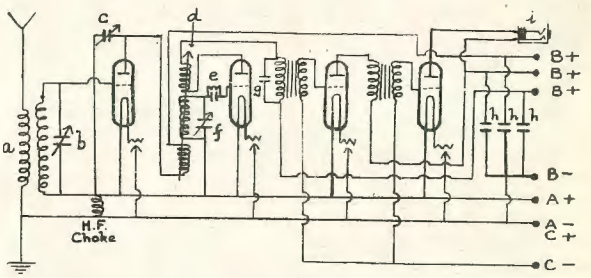
The various components should be mounted on the front panel shown in fig. 1.

The three coil holder (a) is mounted in the centre of the panel close to the top edge. The two dials (b) are the .005 variable condensers while the centre knob (c) is the neutralising condenser. The four rehostats (d) are mounted at equal distances along the bottom of the panel. Jacks are inserted one either side of the last rehostat.

The single coil holders are mounted on the back of the panel above the two condensers.

The four valve sockets are now screwed to the wooden base about 2 inches from the rear edge. The grid leak and condenser is fixed between the first and second valve sockets, while the two transformers are fastened between the second and third, and third and fourth sockets. Space should be left to mount the 3.5 fixed condensers after the fourth valve.

The front panel is screwed to the baseboard, and the thin bakelite strip is mounted on the rear edge of the baseboard. On this strip are fastened ten terminals. There are aerial, earth ,and "A," "B," and "C" battery connections (see fig. 1).



The wiring can now be proceeded with and the circuit diagram is shown in fig. 2. The aperiodic aerial coil is fitted into the single coil holder. The terminals on the plug of this coil are connected to the aerial and earth terminals.

A 250 turn choke coil is used in the other single coil holder. The values of the coils used in the three coil holder are: Left, 25 turns; middle, 50 turns; and right, 60 turns.

READY FOR TESTING.

Turn the filament rehostats until the valve filaments reach a suitable brilliancy and, by means of the wander plugs on the H.T. and grid bias batteries apply about 45 volts to the anode of the H.F. valve,

Improve Your Reception

with

EDISWAN Valves

(Stocked in English and American Caps)

TYPES "A," "R," and "R."
Plate Voltage, 30-80. Filament Voltage, 4. Normal Filament Current 0.75 amperes. Prices, 5/- each.

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

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

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

ALL WIRELESS DEALERS

Wholesale—

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

50 to the detector, and 120 to the amplifier with about three negative volts on the grid of the last valve.

For the first test and in order to become accustomed to the "feel' of the set the coupling between the plate coil of the first valve and the tuned secondary coil of the second valve should be as tight as possible to keep the reaction coil well away from the centre coil.

Now search round for signals by slowly rotating the two variable condenser dials. If self-oscillation is evident in the H.F. valve, the neutralising condenser should be adjusted, the operator first making sure that the reaction coupling is not too tight.

Having tuned-in the local station the battery voltages should be readjusted until the best results are obtained.

It will be noticed that as the aperiodic plate coil is gradually separated from the detector valve grid, coil signals become more sharply tuned. **Thus the amount of selectivity required may be governed by a simple movement of the aperiodic plate coil.**

If it is desired to receive another station on a wavelength approximately that of the local station, then it is only necessary to loosen the coupling already mentioned, and greater selectivity will result, enabling the local station to be separated from others working on neighbouring wavelengths.

Radio A4CG

A4CG is owned and operated by Cliff Gold, Drake street, Hill End, Brisbane, and has only been in operation since June 29th, 1926, but during this short time, the call has become known all over Australia.

Using a UV201A, he has been QSO all but sixth and seventh districts of Australia, and the fourth district, New Zealand.

However, the time came when the op. felt that he needed a five watter. Its installation in the socket made a big difference as all States were worked within a week.

Then came a UX210, and now 4CG is QSO U.S.A. nightly, sometimes as many as four or five stations being worked in a night with a power round about 20 watts. He is reported R8 in Victoria and R5 in Illinois, U.S.A., and R6 in California—has also been heard in Japan.

It consists of the familiar coupled Hartley, and the plate supply is 500 volts, chemically rectified A.C.

On Sunday, 19/9/26, 4CG succeeded in getting fone over to U6EX at San Francisco, U.S.A., and reported R3 to R4.

American stations worked to date are:—

U4RM, U5AMT, U5DE, U5WW, U5ARN, U5AUZ, U6AKM, U6BDJ, UBB3, U9ARA, 9BHT (twice), U9CVN, U9DAY, U6BXI, U6EX (fone), U6CHY, U9DVL. Various other stations have been heard calling, but were not worked.

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Retail Price 22/6

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Bargain Tabie

Glass Enclosed Crystal Detectors 1/6
Crystals (assorted) . . . . . 3d.
Rheostats, 6 ohm. 1/–
Two Valve Polar Set (incomplete) . . £3
Odds and Ends at Ridiculous Prices.

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Scientific, 3000 ohm. 15/–
Murdock, 3000 ohm. 15/6
Trimm Dependable, 2400 ohm. 22/6
Ericsson, 4000 ohm. 22/6
Brandes Matched-tone 30/–
Baldwin 39/6
Dulcephone, 8000 ohm. 18/5

Igranic Fixed Condensers

.0001, .0002, .0003, .0005, .001, .002 each 2/–
.003, .005, .006, each 2/6

Igranic Coils

25 turns, mounted 4/–
30 „ „ 4/–
35 „ „ 4/3
40 „ „ 4/3
50 „ „ 4/3
60 „ „ 4/6
75 „ „ 5/–
100 „ „ 5/3
150 „ „ 5/9
200 „ „ 6/–

Arrestors & Switches

Combined Switch and Arrester, 2/6 and 2/9
Electrad Arrester 3/6
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S.P.D.T. Switch, Mounted . . . 2/6 and 3/3
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Philips B.406 . . . . . 13/6
U.V.200 . . . . . 7/6

Full range of Philips and Mullard Valves always stocked.

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Russell's 1/6
Galena, N.H.M. 1/–
Hertzite 1/–
Fixed Carborundum 11/–
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Detectors

Glass Enclosed, ... 1/6, 2/9 and 5/6
Open type, unmounted 1/3
Open type, mounted . . . . . 2/- and 2/6

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REMEMBER ALWAYS —— We pioneered Radio in Queensland. We carry largest stocks—We offer better values.

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Buy your Wireless material from the well-known Radio Store of Wireless House Ltd. You are then assured of new stocks, greater assortment, keener prices, and lasting satisfaction. Our prices will attract you—our service will hold you.

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Sockets, V.T., Porcelain, Suregrip 4/–
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S.P.D.T., Switches 3/6
D.P.D.T., Switches 4/6
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Condensers, .0005, variable S.L.L.L. . . 17/6

Ormonde Variable Condensers

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Large shipment arriving, 25/9/'26.

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Jefferson Star, 3-1 and 6-1 . . . . . 18/6
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Jefferson 38, 6-1 . . . . . 25/–
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Dulcephone Three Valve, complete £17/10/–
Dulcephone Four Valve, complete, . . £24
Dulcephone Five Valve, complete . . £50
Dulcephone Six Valve, complete £55
Loud Speakers extra.

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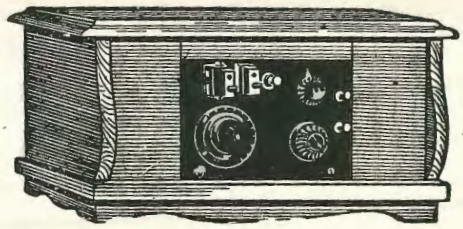
The sale of our Dulcephone sets has been so heavy that we have no hesitation in saying that there is nothing to equal the quality of reception and the distances they will receive from at the prices quoted.

City Buildings, Edward St. Brisbane



Loud Speaker Reception on

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2-Valve Set for

£12-10-0

Beautifully clear reception, with splendid tone and volume on 4QG are possible with the Duodex. Southern Station can also be brought in. It operates from 200 to 2000 metre wave lengths.

The Duodex has been built to meet the demand for a low-priced receiver on which to hear 4QG programmes, and represents greater value in wireless sets than has ever been offered before.

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

The set is sold complete with valves, loud speaker, "A" and "B" batteries, aerial equipment and earth wire. No extras are required.

The Duodex has been designed entirely by our Radio Engineer, and is built throughout of good material. Everything necessary for the initial equipment of a Radio Set can be procured from Chandler's.

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S.A.S.

Artists Appearing at 4QG

Mr. J. P. CORNWELL,

well known to listeners as one of 4QG's most popular artists. Mr. Cornwell possesses a bass-baritone voice of good quality and range, that registers well over the air. He has been successful in Eisteddfod in Brisbane during the past few years, and has appeared on most of the concert platforms in and around Brisbane.

In 1921 Mr. Cornwell won the Australian Natives' Association Vocal Scholarship in open competition. His musical training has been in the very capable hands of that well known Brisbane teacher, Mr. Leonard Francis.

MISS ETHEL PETERS
(Soprano).

Miss Peters, of Melbourne, who is on a visit to her home state, appeared on 4QG's programmes during September with great success. She is possessed with a voice of wonderful flexibility and purity, and her interpretations are invariably excellent.

Miss Peters has studied extensively in the South at all the notable conservatoriums. Her many friends in Queensland would doubtless be pleased to hear of the wonderful progress she has made in her art.

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6 Volt 24 amp hours	£3	5	0
36 " "	3	15	0
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Acoustics is the science of sound. Radio acoustics is the science of transforming the electrical impulse into audible sound. The electrical impulse is a jolly little fellow who needs to be consulted if you are to get the best out of him. We've been making friends with him for seventeen years and the *Table-Talker* is but one result of our efforts. The goose-neck horn means clearer and more rounded tones, and the patent material of which it is constructed eliminates any suggestion of harshness or metallic resonance. Fitted with an adjustable diaphragm, it is finished in a pleasant shade of neutral brown. Height 18", bell 10".

Ask your Dealer for Brandes.

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Crystal  Control

A Simple Explanation of this latest development of Radio Science

Fig. 1, showing Crystal.

(By LEIGHTON GIBSON, 4AN).

Mr. Leighton Gibson has set out a very absorbing article on a new and much-discussed subject. He has wisely written it in simple language, so that the veriest beginner may comprehend the principles involved.

Since it was announced that the new Sydney Broadcasting Station (2GB), erected by the Theosophical Society, will be, when completed, crystal-controlled, many have probably wondered what this term means.

Contrary to what its name would seem to indicate, this comparatively new development has nothing whatever to do with the familiar "crystals" of galena and other minerals which are in such extensive use for receiving purposes.

The crystal used for crystal-control is, in reality, an accurately ground and polished plate of very fine quality quartz.

You will see by referring to Fig. 1 that the quartz crystal is, in appearance, almost identical with a small piece of clear glass.

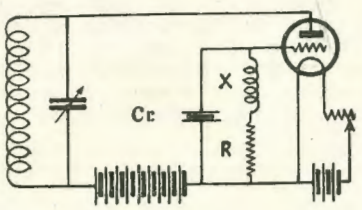

Fig 3.—Simple Crystal Oscillator Circuit.
Cr.: Quartz Crystal X.: R.F. Choke
R.: Grid Leak Remainder self-explanatory

Its operation depends upon the fact that, when a properly cut and ground crystal is placed between two flat metallic surfaces (see Fig. 2), and an E.M.F. or electrical pressure is applied to the two metallic surfaces, the crystal actually becomes thinner, but at the same time "spreads out" slightly. This action may be compared with what occurs when a piece of soft rubber is squeezed between finger and thumb, except that, in the case of the crystal, the movement is of such microscopic dimensions that it is quite invisible to the eye. It is there, for all that.

Now, if the E.M.F. which is being applied to the crystal via the two metallic surfaces is suddenly removed, the crystal immediately endeavours to return to its original thickness. In doing so, however, it "overshoots the mark," so to speak, and now becomes thicker than it was originally. Again it attempts to return to its normal thickness, and once more it "overshoots the mark" and becomes **thinner**, and so on. This alternate expansion and contraction continues with a gradually decreasing amplitude until the inertia stored up by the crystal (and originally imparted to it by the electric charging current) is expended, when the crystal remains at rest.

OSCILLATION.

You will probably have guessed by this time that this movement of the crystal is nothing more or less than—**Oscillation.**

It is, of course, taking place at a tremendous rate of speed, and the peculiar part about it is that the **frequency with which the crystal expands and contracts is governed by its original thickness.** You will readily understand this when you reflect that if you want your clock to go faster, you shorten the pendulum, and vice versa. In exactly the same way, if we want our crystal to oscillate at a higher rate of speed (or at a higher "frequency," as it is called), we grind the crystal so that the distance between its two surfaces becomes shorter; in other words, we make the crystal thinner.

WHAT THE CRYSTAL DOES.

Now that the properties of a piezo-electric crystal —its correct name—have been explained, it may be asked: "What are the uses to which these oscillating crystals may be put?" The answer, as far as their application to radio is concerned, is simple: They may be used to control the frequency (or wavelength, if you prefer it that way) of a transmitting station, and they serve also as an absolute standard of frequency.

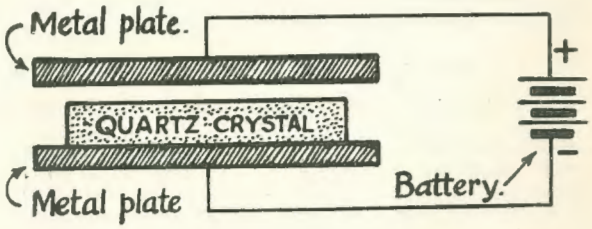

FIG. 2.

Our previous analogy of the clock pendulum will give you some idea of the manner in which the quartz crystal controls the frequency of a transmitting station.

Remember that the crystal will not continue to oscillate unless an electric pressure is applied to it at regular intervals.

The same is true of a clock pendulum—the mechanism of the clock must give the pendulum a regular "push" to maintain it in an oscillating state.

The pendulum controls the speed of the clock, yet the energy necessary to keep the pendulum in motion is supplied by the very clock which it controls.

In almost the same way it is possible to connect a quartz crystal to a transmitter so that the transmitter supplies the energy to keep the crystal in an oscillatory condition, while the crystal controls the frequency—or wave-length—of the same transmitter's output.

The whole reason for the use of crystal control lies in the fact that **the output of a transmitter so controlled will be of exactly the same frequency as the crystal which controls it.**

I should say here, in passing, that when dealing with crystal control—and indeed with any subject relating to radio—it is much more convenient to speak or write in terms of frequency (in kilocycles) rather than of wave-length (in metres). In a future article I hope to explain the simple relationship between the two methods of measurement.

THE ADVANTAGES OF CRYSTAL CONTROL.

With the ordinary type of transmitter, not equipped with crystal control, it sometimes happens that the wave emitted by the station strays from its allotted frequency, and instead of the station operating at its normal frequency of, say, 850 kilocycles (wave-length 353 metres), it may shift to 857 kilocycles (350 metres). When this occurs, the station may cause serious interference, and the discrepancy is highly undesirable, in any case.

Various factors may contribute to this frequency-shift; carelessness on the part of the operators, laxity of supervision, or an unsteady power supply may all play their part. Another kind of frequency-shift can be caused by the transmitting station's aerial swinging in the wind, although a modern broadcaster is rarely or never an offender in this respect

A crystal-controlled station, however, is affected by none of these things. If its crystal is ground to the station's assigned frequency, the transmitter's output remains at that frequency, and nothing short of deliberate mal-adjustment can shift it.

PRACTICAL APPLICATION.

Now, merely as an illustration, let us suppose that it has been decided to instal crystal control at 4QG.

4QG's assigned wave-length is 385 metres, which is equivalent to a frequency of 779 kilocycles, so a suitable crystal must first of all be obtained (not all specimens will oscillate), and then carefully ground until it is found by measurement that it oscillates at exactly 779 kilocycles; that is, it contracts and expands 779,000 times per second. The crystal is then mounted in a suitable holder which need not be described here.

The quartz crystal can control directly only a comparatively low-power transmitter, the output of day broadcasting requirements.

We can easily overcome this difficulty, however, by connecting our crystal to a small transmitting valve—Fig. 3 shows the fundamental circuit—delivering a power of the order of ten watts or less, and feeding this small amount of crystal controlled energy into a number of successive stages of amplification. These are really radio- or high-frequency amplifiers, similar in their action to the amplifiers used in a receiving set; but in the case of a transmitter they are called "power amplifiers."

Very la'rge valves are used, working at an enormous voltage, and our original power of about ten watts is "boosted" to such an extent that by the time it reaches the transmitting aerial it has perhaps reached a value of something like five thousand watts, and—**it is still crystal-controlled energy!**

THE RESULT.

The result is that, since the crystal (which was previously ground to 779 kilocycles) is controlling the transmitter, the transmitter can operate only at the frequency of the crystal—779 kilocycles.

Hence it follows that the output of our transmitter must have a frequency of 779 kilocycles (or a wave-length of 385 metres), and no amount of carelessness or power supply fluctuation can alter this value.

WHEN IS CRYSTAL CONTROL NECESSARY?

It must be said here that, on account of their excellent design, frequency shift in any marked degree is very uncommon among the main Australian broadcasting stations, and in any case our stations are so widely spaced—with regard to frequency (or wave-length)—that actual interference due to a slight variation in frequency is a very remote possibility. Nevertheless, it has happened.

On the other hand, where the number of broadcast stations operating in adjacent frequency channels is very large, as in the United States of America, the ability of the various stations to adhere to their allotted frequencies is of paramount importance. It is for this reason that the more progressive American broadcasters are installing crystal control.

OTHER USES.

Because in this article we have dealt with crystal control as applied to broadcast transmitters, it must not be thought that its usefulness ends there. On the contrary it is possible that this method of frequency control will find much more extensive use on what are at present known as the "short waves"—i.e., wave-lengths below 100 metres (frequencies above 3,000 kilocycles)—where the difficulty of maintaining a steady frequency becomes, under certain conditions, acute.

Another very important branch of the oscillating crystal's field of usefulness is the calibration of wave-meters. With the aid of a crystal whose fundamental frequency is accurately known, it is possible to calibrate a good meter with an accuracy of one-hundredth of one per cent! Moreover, its value in this respect is intensified by its portability—the average crystal can be packed in a matchbox!

CONCLUSION.

I have endeavoured, in the course of this article, to explain the action of the piezo crystal in a clear and understandable way, without resorting too much to technicalities; but since, in an article of this nature, it is very difficult to reconcile popular language with technical accuracy, I must ask the indulgence of any of my more technically-inclined readers who may detect any flaws in the analogies cited.

Battery Hints for Dry-Cell Users

The Burgess Battery Co. issue a little leaflet with their batteries, which contains some simple but sound advice for dry cell users. It reads:—

Radio receiving sets and the conditions under which they are used vary so greatly that it is impossible to give detailed advice regarding batteries that will fit all cases. It is possible, however, to make some general suggestions that may prove helpful.

BATTERY CONNECTIONS.

"Parallel" means batteries connected negative to negative and positive to positive. This does not affect the voltage of the combination, but decidedly increases its capacity, and thus its life. Two batteries connected in parallel will give more than twice the service of a single battery.

"Series" means batteries connected positive to negative. This method of connecting gives a voltage equal to the sum of the voltages of the individual batteries or cells. Thus, a 22½ volt "B" battery is composed of 15 cells connected in series. Two "A" batteries in series gives 3 volts.

"Series-Parallel" means a combination of the above methods. This increases the voltage by the number of batteries in series and the capacity in proportion to the number in parallel.

TEMPERATURE.

Excessive heat permanently injures dry batteries. Low temperatures temporarily lower their test, but when the batteries are thoroughly warmed they will again give a normal test.

TESTING BATTERIES.

Radio batteries should always be tested for their voltage, as that is the important thing to know. Furthermore, they should be tested with a high-grade, high-resistance voltmeter. The ordinary pocket voltmeter has a much lower resistance than the vacuum tube, and its indications will be lower than that actually impressed by the battery to the tube. A low resistance instrument, therefore, may condemn the battery too severely.

LIFE OF DRY CELLS.

"How long will a battery last?" is a common question, but one that is impossible of definite answer. In the case of "A" batteries the type of tube used has an important bearing on this question, also the number of batteries used in parallel. In the case of "B" batteries the number and type of tubes and the amount of "B" battery voltage are important factors. In general, it may be said that the more tubes that are used and the greater the plate voltage, the shorter the life of the "B" batteries. The size of the "B" battery is also a consideration, as is explained further on. In this connection also see the section on "C" batteries. It should always be remembered that the life of a radio battery is purely a question of hours of service, and cannot be measured in weeks or months.

"A" BATTERIES.

Use dry cell "A" batteries only on dry cell tubes. For economical battery service do not have a current drain of more than .25 amperes on each cell. Be sure you have enough "A" batteries to give the voltage required for your tubes (tube and set manufacturers usually give definite data on this point).

The wiring of "A" batteries should be insulated heavy copper to reduce the energy loss in the wires. If there is a loss of energy from small wires, poor contacts or a fixed rheostat which cannot be entirely cut out, the service-hours will be lower than should be expected. Filament rheostats, therefore, should be used, in which the resistance can be turned out of the circuit entirely.

To obtain the maximum service from "A" batteries the rheostat must always be left in the "off" position when the set is not in use or the batteries should be disconnected entirely. The rheostat should, in use, be controlled to keep the current as low as possible. Do not use more battery current than is necessary—in other words, turn up your filament rheostat only enough to get good results. As your "A" batteries get older it will be necessary to turn up the rheostat farther.

"B" BATTERIES.

Twenty-two and a half volts is usually taken us the "B" battery unit. There are three classes: One-pound, represented by No. 4156; two-pound, represented by No. 5156; five-pound, represented by No. 2156. The only difference is in size—in other words, amount of material, which means a difference in service furnished. The larger batteries are much more economical. For instance, a 2156 "B" battery should give at least five times the service furnished by a 4156, though the difference in cost is much less—and the 4156 will give exactly as good results as long as it lasts. A 45-volt battery is the equivalent of two 22½-volt batteries, of the same class, connected in series. There is some advantage in using 22½-volt units, because if one unit should be injured it does not injure the other units. The unit on the detector tube has a drain from both the detector and the amplifier. For this reason it is advisable to, from time to time, shift the "B" batteries, thus equalising their hours of service. This is an additional reason for using 22½-volt units. Do not use more "B" battery voltage than is necessary to get good results. In other words, if 45 volts give the desired results, why use more? The more "B" battery voltage you use, the greater the drain on your batteries, and the shorter their life; also, the more tubes in your set, the shorter the life of the "B" batteries.

Vertical type "B" batteries are no different, so far as service is concerned, from the block type. It is

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simply a case of this shape being more convenient in some sets.

"C" BATTERIES.

When using more than 45 volts of "B" battery the addition of a "C" battery will add materially to the life of the "B" batteries, and usually result in better reception. This battery is connected between the filament and the grid, and it reduces the amount of plate current, and, therefore, increases the service-hours of "B" batteries. The "C" battery should be connected at the negative of the "A" battery, in many sets between the filament lead on the (→) of the "A" battery to the "F" post of the transformer.

It is not possible to give specific instructions for connecting a "C" battery on account of the great difference in the wiring diagrams. Your dealer can undoubtedly show you how to do this, or one of the neighbourhood radio experts will be glad to help you out.

Lyric Glee Party

STANDING.—Mr. J. P. Cornwell, Mrs. E. G. Bellgrove, Mrs. H. Gibson, Mr. R. J. Robinson

SITTING.—Mr. E. G. Bellgrove, Miss D. McDowell, Mrs. A. F. Stoddart, Mr. T. R. Melville

The Lyric Glee Party needs no introduction to 4QG's listeners. Numerous reports have been received which not only signify the high standard of their entertainments provided at 4QG, but also prove that the party is very popular with listeners in Queensland, and in the Southern States, too. The Lyrics were the first party to perform on 4QG, and have been providing regular entertainments of glees, part songs, madrigals, quartettes, duets and solos since. Quite recently a Concert Orchestra of four performers was added to the party, and future concerts will be given under the title of "Lyric Entertainers."

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(By Q.R.N.)

No. I.

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There are many radio fans who would blossom into ardent DX amateurs if they only knew how comparatively slight was the knowledge required to gain their A.O.P.C. ticket We intend to feature a series of articles which will constitute a very complete course for all those who have a lean towards the fascinating hobby of key pounding, and who some day aspire to sit for their ticket. Readers whose fancy does not lead them to amateur fields will also find the articles mighty interesting and instructive reading.

Possibly the most satisfactory manner of introducing this series of articles would be to give a few details of the Amateur Operators' Proficiency Certificate examination itself.

This examination, which is the recognised amateur standard of proficiency in Australia as laid down by the Federal Wireless Regulations issued by the Postmaster-General's Department, is held at frequent intervals throughout the year by the Wireless Branch of this Department.

In Brisbane, as in the other capital cities, the examination is conducted by the State Radio Inspector. In other parts of the States the test is arranged by the local Postmaster.

Intending examinees are required to apply to the Manager of Telegraphs and Wireless, Postmaster General's Department, Treasury Gardens, Melbourne, for permission to sit, enclosing with such application an examination fee of 5/- (per candidate). The Department at Melbourne notifies its decision to the candidate, and the local Radio Inspector later advises the candidate of such arrangement as may have been made for his examination.

In Brisbane it has been customary to so arrange the date of examination that about five or six candidates present themselves together.

Now, as to the examination itself—suffice it to say that it is searching but not severe. Any enthusiast who has taken the job seriously should get through without undue trouble. Seventy-five per cent. of the total marks are required in each of the three papers for a pass, which provision is only to be regarded as reasonable, for it ensures that only such candidates will be successful as may be reasonably regarded as capable of running a transmitting station efficiently.

To my mind, the only way to satisfactorily set about this examination as to do the work with a friend who also is keen on getting his ticket.

I know of the case of three members of a Brisbane radio club who made up their minds in a burst of enthusiasm one evening to sit for the A.O.P.C., and had actually sat for the examination in six weeks. Later on they were all advised of their success. However, the time was very short, especially for people whose knowledge of the code was negligible, and whose ideas about transmitting were crude. Speaking later to one of the three candidates, he attributed their success to the fact that they had worked for three hours almost every night—one hour on the key and two hours listening to a lecture by one or other of the candidates. I consider the scheme excellent, for it means that the lecturer, who, mind you, is dealing with unfamiliar matter, must have the subject well conned and the fact well-marshelled and the crossfire of question and answer that pervades the lecture is usually the means of covering much more ground than is traversed by a mere reading of a text-book, especially so as most of the questions are put across on the spur of the moment. But—one word of warning—(if any readers consider the scheme worthy of emulation)—never fail to treat the lecture seriously—one hour of deliberate debate is worth more than a day of frivolous talk.

Now let us go a little further I saw above that there were three "papers." The word was used for want of one more suitable. There are two written papers—I speak of the Queensland examination—and one practical Morse test.

The first of the two written papers covers the signalling and traffic procedure as laid down by the Radiotelegraphy Convention of London, 1912—usually five or six questions—while the second paper (of ten questions, of which eight must be attempted) deals with the erection and maintenance of an amateur transmitter; that is to say, it covers the theory of low-power valve transmission.

The articles of this series are intended to cover in detail the subject matter of both papers, as well as giving such instruction as may be possible in Morse telegraphy. It is proposed to make them sufficiently technical to enable a beginner to take the A.O.P.C. course and then sit for the examination without putting him to the expense of buying other text books. The whole course will be much more detailed than any other that has hitherto appeared in the pages of an Australian radio journal. The first few articles will deal with the Morse code, and with standard transmitting procedure and later articles will cover the theoretical side of amateur transmission, including transmitting circuits, modulation, chokes, power supply, and the like.

THE MORSE CODE.

The Federal Wireless Regulations lay down that a candidate for the A.O.P.C. shall read and transmit Morse at the rate of not less than 12 words per minute. Counting the usual five letters to a word, this speed, allowing for spaces, works out at some-

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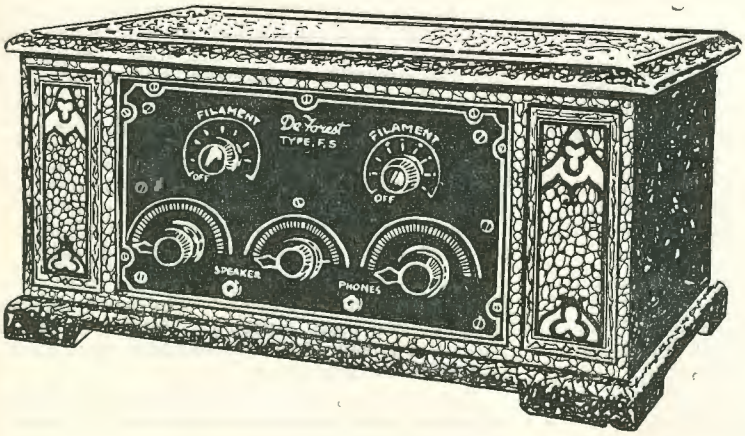

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what more than a letter per second. Candidates for the examination should read at about 15 or 18 words before sitting for the test, as such a speed allows a margin to cover nervousness and the necessity of reading a strange hand. Further, quite lengthy practice will be necessary to enable the novice to read comfortably at this speed Practice is the whole secret of success—practice, and then some more.

As most readers know, there are two Morse codes. The International Morse Code is, however, the one in general use. It, as also the second type, consists of a conglomeration of short and long symbols, known respectively as dots and dashes. Let us look at a Morse alphabet in the International Code. Here it is:—

A . —
A (German) . — . —
A (French) . — — . —
B — . . .
C — . — .
CH — — — —
D — . .
E .
E (French) . . — . .
F . . — .
G — — .
H . . . .
I . .
J . — — —
K — . —
L . — . .
M — —
N — .
N (Spanish) — — . — —
O — — —
O (German) — — — .
P . — — .
Q — — . —
R . — .
S . . .
T —
U . . —
U (German) . . — —
V . . . —
W . — —
X — . . —
Y — . — —
Z — — . .

The spacing and length of the various signals is as follows:—

(1) **A dash is equal to 3 dots.**

(2) **The space between the component parts of each letter is equal to 1 dot.**

(3) **The space between two letters is equal to 3 dots.**

(4) **The space between two words is equal to 5 dots.**

Now, just for comparison, we will look at the old Morse code, which consists of dots and dashes and spaces.

A .—
B —...
C.. .
D —..
E .
F ..—.
G ——.
H ....
I ..
J —.—.
K —.—
L ———
M ——
N —.
O . .
P .....
Q ..—.
R . ..
S ...
T —
U ..—
V ...—
W .——
X .—..
Y .. ..
Z ... .

Candidates are not, of course, expected to learn this code, but it is of interest in showing how the present International Morse Code has been built up. Notice how spaces are introduced into various letters (compare H Y Z, etc.), and think how such would tend to slow up transmission. It is also of interest to note how the old F has changed into the current R, the J into our C, Q into F, and to see how T and L in the old alphabet are rendered by dashes of varied length.

Let us go back to our International Morse Code and consider how best to master it. It cannot be regarded as learnt until the learner can pick up each letter immediately by ear without mentally analysing it into its component parts—but once this stage is reached the goal is virtually won.

Of course it would never do in practice for a telegraphist to say, when receiving a message: "Now, let me see—dot, dash, that's A and dot, dash, dash, dot, that's P, and so on.

After a few weeks practice the beginner will learn to recognise various letters, and it is noteworthy that letters like F, Q, C and X, probably due to their rhythmic formation, usually stand out from their fellows and are more recognisable.

Now, as for learning the code. I personally consider that the best way is to tackle the whole lot just as it stands. However, another method was greatly in vogue a few years ago, and which may appeal to some readers, relied on certain key sentences in which the initial letter of each word represented Morse symbols arranged according to an easily memorised system. Such sentences, with the relative Morse symbols, were:—

. Each
.. Individual
... Scout
.... Has
. — A
. . — Unit
...— Value.
——. Guard
——.. Zealously
—.—— Your
. — . . Land
..—. From
——.—Quakers.
— Tell
—— Mother
——— Our
—. New
—.. Dog
—... Begs
. — — Will
. — — — Japan
.—. Resent
—.— Keenly
—.—. China's
.——. Proposed
—..— Xpansion.

The sentences quoted have remained in the writer's memory for years, and, though their form is anything but classical, they serve a purpose, and readers may find them interesting. The reader can see for himself exactly how each sentence runs, either in an increasing series of dots or dashes or in opposites, or in a combination of the two.

The numerals are easily learnt, for they are formed according to a definite plan of increasing dots and increasing dashes. In each case they consist of five symbols, and are as follows:—

1 .————
2 ..———
3 ...——
4 ....—
5 .....
6 —....
7 ——...
8 ———..
9 ————.
0 —————

As well as the numerals here given there is what is known as the short system of numerals, which runs as follows:—

1 .—
2 ..—
3 ...—
4 ....—
5 .....
6 —....
7 —...
8 —..
9 —.
0 —

These short numerals (compare them with the list of ordinary figures to see wherein the difference lies)

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must be used (so says Appendix II. of the P.M.G.'s Handbook for Wireless Telegraph Operators) "in official repetitions and in the preamble of radio-telegrams."

They are often heard, however, and a listener-in is likely to be caught for the first half-dozen times. By the way, too, the preamble of a radio-telegram is, of course, the introductory part prior to the address, and contains such service information as number of words, route, date and time, and so forth. We shall deal further with this in an early article.

Consideration has now been given to the Morse alphabet and numerals. We next have to turn our attention to the various punctuations and other signals. The complete list should be learnt by heart, of course, just as in the case of the alphabet, and will probably be less trouble because the symbols are more interesting and the tyro begins to feel that he is at last getting on the job. Here is the list—(twenty-six, all told):—

Full-stop	Parentheses (before and after the words enclosed) — . — — . —
Semicolon —.—.—.	
Colon ———...	
Comma .—.—.—	Understood ...—.
Hyphen (dash) — . . . . —.	Wait .—...
Apostrophe .————.	Error . . . . .
Note of Exclamation ——..——	

Inverted commas (before and after each passage in inverted commas)	.—..—.
Underline (before and after passage underlined)	..——.—
Bar indicating fractions	—..—.
Preliminary Call	—.—.—
Invitation to transmit (Go ahead!)	—.—
"Received" Signal	.—.
Double dash—Bread sign— (separating preamble from address, address from text, and text from signature—written=)	— . . . —
Note of Interrogation or Repeat Signal	. . — — . .
End of Message	.—.—.
End of Work (closing down)	...—.—
Safety Signal (TTT)	— — —
General Call (CQ)	— . — . — — . —
Distress Call (SOS)	. . . — — — . . .
Warning of High-power Transmission (MIM)	— — . — —
Admiralty Signal (XIX)	— . . — . . — . . —

It must be noted that, with the exception of the full-stop, general call (CQ), and safety signal (TTT) signals, all the above are transmitted as one group, and are not broken into parts, thus the comma, though often referred to as AAA, is keyed as .—.—.— and not as . — . — . —

It is a point worth noting that signs of punctuation written on a radiotelegram are not transmitted unless the sender makes a request to that effect. In such event the signs are, of course, charged for. Comments on the use of the various signs will be made in the third article.

Next article will deal with the International Abbreviations and with Traffic Procedure.

Whisperings from Maoriland

By Our Special Correspondent

An amicable arrangement has been arrived at between the Australasian Performing Rights Association, Ltd., and the Broadcasting Company at Auckland on the question of broadcasting musical compositions of which the Association possesses the copyright.

A percentage of the Broadcasting Company's gross revenue was demanded by the Association in return for permission to broadcast the music affected. Mr. Edwards, Secretary of the Association, stated afterwards that it had been possible for the Association to concede lower terms than those agreed upon in Australia, as it was realised that some encouragement should be given to the young organisation.

Mr. R. Leslie Jones, a well-known resident of Lyall Bay, Wellington, has been giving attention to the Japanese Station (JOAK), and on one recent night, while Melbourne was still broadcasting from 3LO, he succeeded in picking up the Japanese station without any difficulty. On this occasion Mr. Jones was using his eight-valve ultradyne set. The music broadcasted from Japan is very weird, and the instrument, "Samosen" (sounding very much like a banjo with an effect similar to a "pizzicato"), which accompanied the singer the evening when Mr. Jones listened in, was quite interesting.

The Directors of the Press Association have issued a statement to the effect that complaint has been made to them that broadcasting agencies are infringing the Copyright Act by issuing cable news to their subscribers. In their statement the directors say that as the newspapers of New Zealand are paying some £40,000 per annum for the fine cable service the public enjoys, they must be protected against piracy of their property, whether by broadcasters or any other persons. The notice is therefore issued as a warning that such infringement of the law will be followed by prosecution. The Telegraph Department had promised that a clause would be put in the regulations drawing attention to the fact that copyright cables must be respected, but it was overlooked. This, however, does not affect the legal rights of the Press Association.

When the Postmaster-General announced that Honorary Inspectors were to be appointed in connection with the Wireless Regulations there were many complaints as to the principle involved, but since such wisdom has been shown in the selection of inspectors all opposition has died down.

The fund in connection with the wireless installation at the Wellington Public Hospital is rapidly growing, and already several hundreds of pounds have been collected. Wellington's ever-ready lady helpers recently held a street day in connection with the appeal, with the result that the amount to the credit of the fund has grown considerably.

The following addition to the wireless regulations is published in the "Gazette":—

"Wireless aerials shall not, without the consent of the licensee for the supply of electricity concerned, be erected above or below wires used for the supply of electricity, or sufficiently near to such wires to permit of contact with them, should either class of wire break, become detached from its support, or the supports fail.

Mr. H S. Rose, of Seatown, Wellington, operating a six-valve modulating ultradyne receiving set, picked up KGO, transmitting from Hotel St. Francis, San Francisco, at 8.15 p.m. recently. KGO operates on about 288 metres.

It is all the more interesting to know that Mr. Rose operated with six stages of radio frequency, and with no audio.

On one evening recently the Amalgamated Wireless entertained the members of the Wellington police and detective forces to a broadcasted radio concert. Great interest was shown by all those who listened in and the officers were loud in their praise for the kindly action of the Amalgamated Wireless in making the pleasant evening possible.

AMPLION SPEAKERS.

Messrs. Amalgamated Wireless (Australasia) Ltd., of King House, Queen Street, Brisbane, inform us that they wish to contradict a rumour that has been created by some irresponsible persons concerning Amplion Speakers. This firm wish to make it plan that the making of the model Amplion known as AR19, has not been discontinued, and that if any scarcity has been experienced it has been solely through the demand exceeding the supply. Full stocks of this model are now available.

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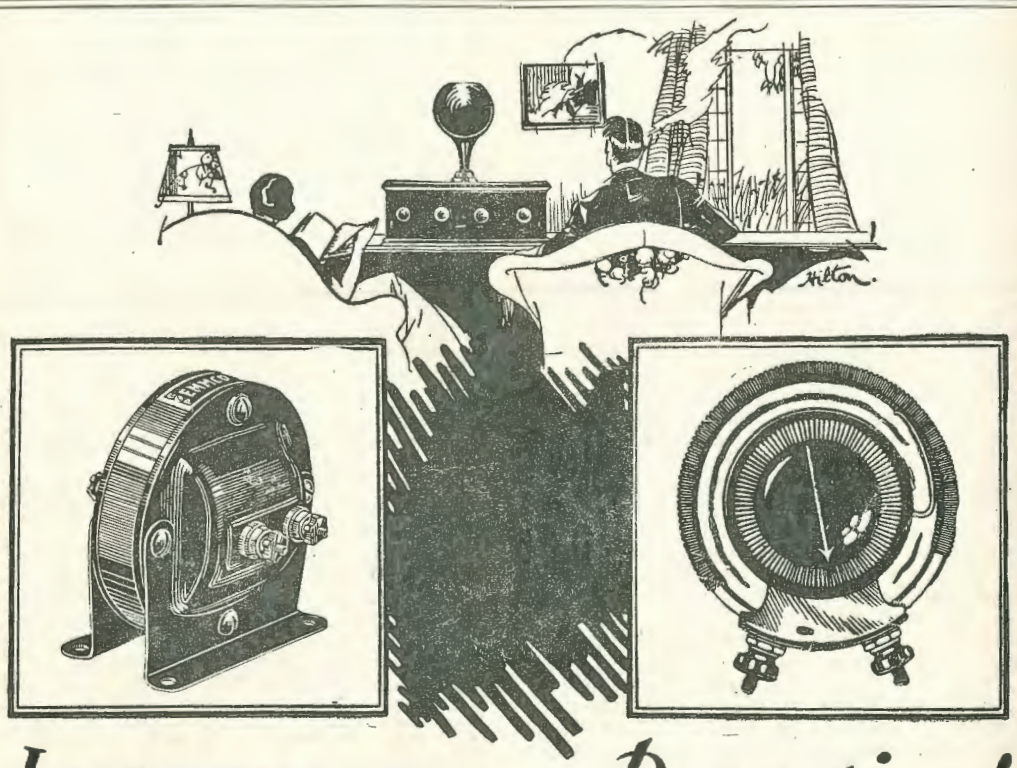

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Uncle Ben's Corner

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

To All My Little Sweethearts and Friends,—

Hello Everybody! I am more than pleased to be able to tell you all that I have now recovered from my illness, and am feeling well and strong again. I expect by the time you are reading this issue of "The Queensland Radio News" that I will be splashing in the breakers—or perhaps catching some real big fish—down at the seaside somewhere. Wait till I get back to 4QG—I'll be able to tell you some wonderful fish stories. I'll make all the daddies and big brothers wish they were me. My word, I'll be pleased to be back with you all again—it will be old times all over again, won't it? Five weeks is a long time to be away from you all, and I don't know however I could have filled in the time only for the fact that so many of you wrote me such bright and cheery letters. I must **THANK YOU** all right now (please, Mr. Editor, put "thank you" in black type so that all my sweethearts will know that I mean it). **THANK YOU** also little ones for all the nice flowers, books, toffee, eggs, honey, and strawberries, etc. that you so kindly sent to me, it was really too good of you all. Now listen, Sweethearts, I'm going to shout out something extra loud to you all for being so thoughtful—**T H A N K Y O U**—I hope you **ALL** heard that. I would love to give you all a big hug and a kiss, too. I am afraid you will spoil me Sweethearts for you are all really too good to me.

I am pleased to know that the last puzzle was not too hard, for over 720 boys and girls entered for it, and 627 finished it correctly—that's splendid. The first two correct puzzles opened were awarded the prizes, and you will see the lucky winners, together with the correct solution elsewhere on this page. There is another new puzzle this month, and I hope you will all try again—you just might be the lucky ones this time. There will be three prizes given this time (value, 5/-, 3/-, 2/-). I must congratulate the winners of the last competition, and I hope they will like the photos. Cheerio Sweethearts for just a little while—you will hear me again at 4QG very shortly now, and I can tell you all that there will be nobody in the whole of Australia more pleased than I to be with you all again. Goodbye little ones for a little while.

Yours, very fondly,

UNCLE BEN.

Some Radio Sweethearts at Hilda Sayce's Birthday Party, Paddington. Mabel Sunshine, Uncle Jim, Uncle Ben, and Jambo had a rollicking time. This took place, of course, some weeks before "Uncle Ben" became ill.

LAST MONTH'S COMPETITION RESULTS.

The Solution.

First Prize.
VIVIAN GOLD, Thompson Estate, South Brisbane.

Second Prize.
MAYONE PERRY, Oonoonba, via Townsville,

(to whom the prizes will be forwarded)

THIS MONTH'S PUZZLE.

Make four words out of the following letters:—

S A D W E T M I N T R E A P

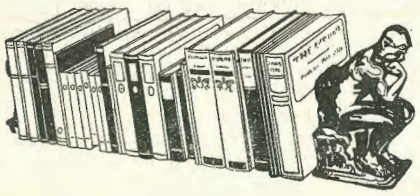
The first word represents something most people drink at meal-times.

The second word represents something we find on the grass and plants early in the morning. When spelt backwards it has the same meaning as marriage.

The third word represents something that you can go for a ride in. When spelt backwards it means that the winner of this competition is clever.

The fourth word represents a little article much used by tailors and dressmakers. When spent backwards it tells you what you will get if the point touches you.

Send in your answers to The Editor, "Queensland Radio News," Brisbane, marking the envelope "Uncle Ben's Competition."



Some Good
Wireless Books

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"LOUD SPEAKER CRYSTAL SETS"
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"THE HOME RADIO"
How to Make and Use It.
By A. Hyatt Verrill. 3/10 (post free)

"THE RADIO YEAR BOOK 1926"
Illustrated. 2/3 (post free)

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Covers both Reception and Transmission.
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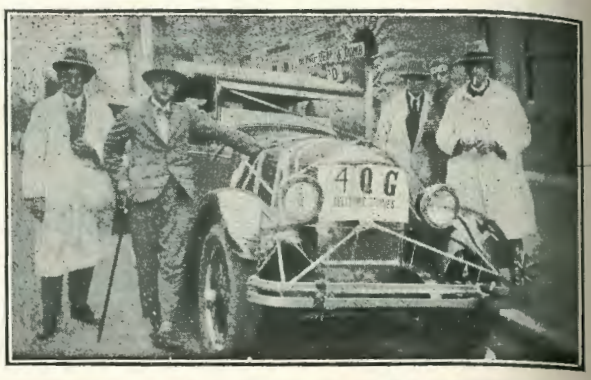

Sambo and Uncle Jim on the left of the car; the Professor in the right foreground. The Sandman took the photograph.

Among the Children

4QG Bedtime Story Tellers at the R.A.C.Q. Children's Outing.

Hospital, Orphanage, and Institute Children who are treated every year to a car-outing to Sandgate by the members of the Royal Automobile Club of Queensland felt their little hearts bound with glee when they saw 4QG's car of Bedtime Story Tellers join up in the long procession to the seaside.

"There's Uncle Jim—and the Sandman" was heard on every side. "I wonder if Uncle Ben is there?" asked another. On arrival at the seaside the party set themselves out to entertain the kiddies. "Sambo" who had evidently forgotten his war paint, was much in demand—although we fear many children were disappointed to discover he was not a "nigger" after all. Uncle Jim, the Sandman, and the Professor sang and played to hundreds of delighted children and by the time refreshments were served the party was in a fit state to enjoy them.

It was a tired but happy procession of children that wended its way back to the city—tired from the frolic of the day, and happy from the meeting with their "friends of the ether."

On Wednesday Evenings

Spend a happy as well as an instructive evening with Mr. H. L. Miller, the Wireless Expert.

LEARN MORSE

easily and quickly under his direction. You will then be able to understand those puzzling dot-and-dash messages you hear from ships and overseas. Fees moderate. Write or call.

Underwood Business College

Opposite Customs House, Brisbane.

2FC Drops to Lower Wavelength

WILL TRANSMIT ON 442 METRES FROM OCTOBER 2.

On Saturday, October 2, commencing with the 7 a.m. session, Station 2FC will adopt their new wavelength of 442 metres. The new apparatus has been completed and tested with excellent results, and listeners generally are anxiously waiting to hear 2FC transmit on their new wavelength.

With characteristic secrecy Station 2FC made the announcement towards the middle of September, stating that the change would be effected within a few days. The Postmaster-General's Department while approving of the change in wavelength considered that listeners were entitiled to a clear 14 days' notice before any alteration took place, consequently the date of the changeover was delayed until Saturday, October 2.

The decision is a notable one, for it means that those listeners whose sets would not expand themselves to receive such a high wavelength have now another excellent station added to their sources of entertainment.

The change will be bound to reflect itself in the future design of receiving sets. No set could heretofore be considered a really first-class selling proposition unless it would receive all Australian stations ,and the enormous difference that lay between the wavelengths of 2FC and other "A" class stations gave set manufactures food for considerable worry. Now, under the new order of things any receiving set capable of receiving southern music will be ab. to pick up 2FC with ease.

ANGLO QUARTETTE PARTY.
Messrs. C. R. Kolb, A. F. Stoddart, N. Watts, R. Pike

Who will, in the near future, be again heard from 4QG. Excellent reports of the popular Quartette have been received by 4QG from every State in Australia and New Zealand. In Eisteddfod competition this Quartette hold an unbeaten record, and the individual members have won Championships in Tenor, Baritone, Bass, and Duet sections in Eisteddfod work.

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

Radio Batteries

6 Volt 60 Amp.	£3	18 0
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Power to receive the distant stations clearly, and clearness for 4QG.

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

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

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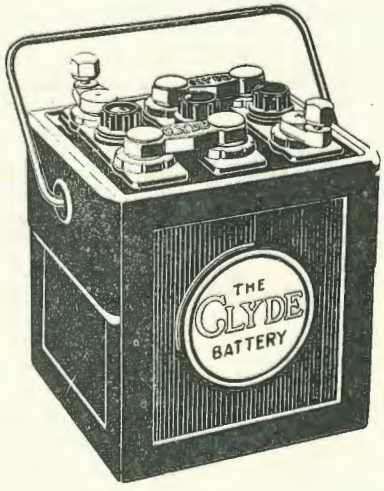
Work well——Wear well

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.

RADIO CLUBS OF QUEENSLAND.

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
TOOMBUL.—Secretary, T. Starkie, Sandgate Road, Nundah.
WIRELESS INSTITUTE (Queensland Division).—Secretary, O. R. C. Runge, c/o Finney, Isles, Ltd., Brisbane.
WOOLOOWIN.—Secretary, H. A. Jiear, Lisson Grove, Wooloowin.
WYNNUM AND MANLY.—Secretary, P. J. Golden, c/o Trackson Bros. Ltd, Elizabeth Street, Brisbane.

WOOLOOWIN RADIO CLUB.

Since our last Q.R.N. report, 4WN's shack has altered very considerably. The bench, which up till now has suffered the indignity of supporting a junk box and blackboard, now groans beneath the weight of 4WN proper. In short, our bone-shaker is on the air. To the Audio Twins—infinite praise, for they have been QSO 2's, 3's and 5's on our one 20IA demi-john. We also learn with a feeling of pride that our set has been entered for the "All Australian" traffic reliability test. Talking of transmitting it strikes me, the Ham-B.C.L. ratio of the club is increasing, for word has just been received that three more of our members have been successful in passing their A.O.P.C. examination. Result—eight ticket holders in 4WN, which is not too bad, considering our membership stands at about twenty-five or so. The pet tube in the transmitter is found to be suffering from electronic spiraleses and therefore takes much persuasion (with screw-driver handles, etc.) to make it light up; but then—Oh, Boy.

Several of our members visited the Wynuum and Manly Radio Society, on the occasion of their official opening on Saturday, September 11th. Was not present myself, but they say she was sure some FB aerial system, to say nothing of that set and speaker hooked on the end of it. Carry on the good work OM's, you sure had a bigger opening than we did. Wonder if you can carry on as well? Best 73's anyway.

We spent a very interesting evening lately with one of our impromptu speech nights. Everyone (except dawg) wrote down on a slip of paper, the name of a more or less serious subject, mostly less. These were put in a hat and the president asked members in turn to draw a subject. Remarkable talent was shown by several members, for instance Mr. Sharpe gave an interesting discussion on "pigs," while Pat Kelly displayed a fair knowledge of "girls." Another member compared the virtues of jazz garters and—(ask a 4WNite), while "yours, etc.," was asked to explain why he did not have a tail like his ancestors.

New members continue to come along regularly, in fact we've had quite a boom since Exhibition and I can picture the treasurer rubbing his hands and gloating over the incoming cash, as if a tenner or so mattered. Our bank account, by the way, is quite respectable, considering hard times, overtime for technical committee, etc. Talking of visitors, at a recent meeting, Mr. Hoe dropped along, and after speaking a few moments, produced, apparently from nowhere, a parcel as big as a coffin, which, on investigation was found to contain Mullard valves and Radiokes coils—the special prizes for Mr. Kington.

Harry Jiear and Leo Feenaghty have done it. No! not got married, at least, not both, but have decided to build battery chargers. Sure some job winding coils and assembling laminations OM's, what! Our worthy secretary cut out a couple of hundred laminations or so, and suddenly found they were all the wrong size—infinite cursing in the camp. His brother in exile made a different mistake, he discovered he did not have enough 16 guage wire to finish the secondary of the transformer so, having plenty of No. 23 he twisted five strands together and wound the lot on. Looks orlrite and sure does work O.M.

We notice that Mr. Love has missed several meetings lately. Not YL we hope OM? Friend Anderson's got motor bikes on the brain. His latest inventory shows three complete bikes, even though one did cost 30/-. Now then, George, what about selling two and donating proceeds of same to the club. Mr. Buchanan has very kindly donated a couple of 36 feet splinters to the club for our new aerial. By the way, Gang, ask Chas. Stephenson the meaning of "FB." Ladies' committee again. Gee, these Q.R.N. reports are a nuisance, its just striking 12 now. No wonder Prescorres gave up the job. Hi.

VEE KAY (Publicity Engineer).

SOUTH BRISBANE RADIO CLUB.

The most important event last month was undoubtedly the State-wide radio dance, which took place on Friday, 17th September.

The club organised a dance to help swell the funds, which was held in the Hibernian Hall, South Brisbane. Member E. Paradise kindly brought along his five-valver and it certainly "delivered the goods" as regards both volume and clarity.

Everybody present seemed to enjoy themselves, but complaints were received that the orchestra was keeping faulty time—due probably to the band engaged by 4QG being a theatre orchestra and not an experienced dance band. The function proved to be a financial and social success.

Little work was done at the club room during the month apart from the re-wiring of a member's four-valve set. This O.M. had been unfortunate enough to trust the re-wiring to an incompetent local "radio engineer," who made a worse job of it than it was before—at a fee of 30 boblets. To save our member any further financial expenditure it was decided to re-wire the set for him thoroughly.

President Young has fallen a victim of the low-wave craze and is most enthusiastic about the abilities of his Bremer Tully.

Intending members should communicate with W. R. Gilbert, hon. sec. S.B.R.C., Gordon Street, Coorparoo.

EASTERN SUBURBS RADIO CLUB.

The club is showing very good progress for a young club. All the members are keenly interested in the building of the club's low loss, low wave receiver of special design. The construction of this set is being carried out on meeting nights.

The club, in common with many other raido clubs and societies, organised a radio dance on Friday, September 17th, at the Cafe Imperial, South Brisbane. Dancing was indulged in until 11.45 p.m. The affair was a social and financial success.

The latest project of the club is to erect a 60-foot telescopic mast of special design at the club room and preliminary work is already under way. It is hoped to have the mast erected and in use by the time this issue of the Q.R.N. is on sale.

We would point out that the club rooms are situated at Dr. Reye's residence, corner Stanley and King Streets, East Brisbane, and that the headquarters of the club are permanently established there.

TOOMBUL RADIO CLUB.

The Toombul Club has been having quite a busy time lately, what with preparing for the forthcoming Toombul Show and the visit to the Wynnum and Manly Radio Society's new clubroom.

The club's two-valve all-wave portable receiver has been completed, and the whole outfit enclosed in a cabinet 12 x 9 x 7. Our official illustrator (Hi) has been hard at work, and designed an elaborate crest, in which the Toombul Radio Club is prominently featured. This sign is to be printed on the cabinet of our faithful "gozinta" (Hi). This is being done in case any person takes a sudden liking for it, when the set is a way on a week-end trip.

Interesting tests were carried out one Sunday morning at Eildon Hill. The result of these tests were described before the other members, who did not participate in the trip, at the following meeting.

These tests proved very interesting, inasmuch as the reception of 4QG, on the summit of the hill, was marked by a well-modulated wave. On the north side, at the foot of the hill, the percentage of modulation compared to the carrier wave had fallen off considerably.

The opening of the Wynnum and Manly Radio Society's Club-room has proved another event in Queensland radio history, and incidentally an attraction for other club members. Five members of the Toombul Club were present at this function.

The club transmitting license is due to arrive at any time now, the call sign to be more than likely 4TR or 4TC, so look out for us fellows; any reports will be appreciated.

Congratulations are offered to 4WE and 4AW to new hams, and also pioneer members of this club. 4AW was successful on his first night in being in communication with A3GF. The power used was only point (3), three of a watt.

He has lately been in communication with various other interstate stations.

4WE is going his hardest on his percolator, and we hope to hear him on the air before long.

T. STARKIE, Secretary.

TOWNSVILLE WIRELESS CLUB.

At a meeting of radio enthusiasts held in the Ambulance Board-room on August 25th a radio club was formed and termed the "Townsville Wireless Club."

Mr. W. Poultney was elected President of the Club, and Mr. E. Jeffries, Hon. Secretary. The first business of the club (after the object of the meeting being called was outlined by Messrs. Wilson and Jefferies, the conveners) was the election of officers, the Patron being Dr. Nott; President, Mr. W. Poultney; Vice-presidents, Messrs. Wilson, Howard and Walker; Scribe, Mr. A. McKinnon; Treasurer, Mr. Ackland; Auditors, Messrs. Philp and Pearce.

A committee, consisting of the Executive officers, was appointed to draw up rules, etc., and to deal with all matters appertaining to the formation of the club.

The admission was fixed at 2/6, and the annual subscription 10/6 At the conclusion of the meeting application for membership was invited, and every one present, numbering thirty-three, gave their names as intending members. As there are a number of radio enthusiasts who were unable to be present, it is hoped that they will come along and join up, and make the club a success.

Leighton Gibson
RADIO SPECIALIST
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For Longer Life and Better Service.
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EXIDE BATTERY SERVICE
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QUEEN ST., PETRIE BIGHT, BRISBANE

The A.B.C. of Wireless

A Simplified Description of Wireless for Beginners

Article No. 2—CRYSTALS AND VALVES

In our last issue was given a simple description of wireless, and now we will proceed with the dissection of a receiving set, explaining the various component parts. The most important part is the crystal or the valve.

THE CRYSTAL.

Almost everyone has seen the simple crystal set, and wondered how a tiny crystal could be the means of such wonderful wireless receptions which are reported occasionally. Formerly the maximum reception range of a crystal was considered to be 25 miles, but now reception of Sydney and Melbourne concerts are not at all uncommon in this State.

The volume obtained, of course, is not very great and once a listener has received the Southern broadcasting stations it is not long before he invests in a valve set.

What is the function of a crystal? In last month's article we included a diagram showing the various stages of reception. When wireless waves are received on your set they are oscillating or surging to and fro. To make these waves audible, or able to be heard, the two-way movement must be converted into a one-way movement.

This is called rectifying or detecting. Certain minerals possess this property of allowing the wireless waves to flow through them in one direction only, and it is from these we obtain our crystals. The most commonly known are galena, pyrites, molybdenite, carborundum, etc. Many of the other "ites" on the market are simply prepared forms of the abovementioned.

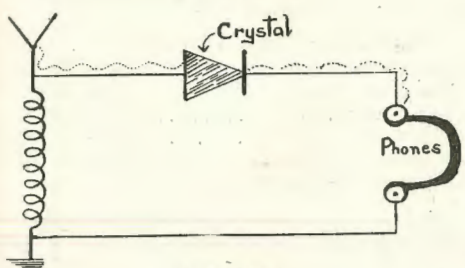

FIGURE 1.

Here is a simple crystal circuit. The crystal is always shown in radio diagrams by the sign employed above.

The circuit shown is very simple and many additions, such as two or three coils or one or two condensers, could be made. Batteries are not used in a crystal circuit except with a carborundum crystal when a battery and potentiometer are employed. The advantage of this crystal is that it is very stable and easy to adjust.

Combinations of two crystals may be used instead of the crystal and catwhisker and are termed Perikon detectors. These combinations are generally zincite with copper pyrites or bornite; tellurium with zincite; and galena with graphite or tellurium.

THE VALVE.

If you examine a valve closely you will see that it is composed of three parts—the plate, the grid, and the filament.

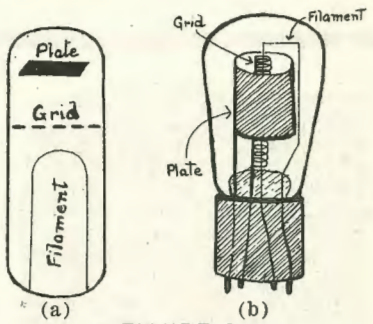

FIGURE 2.

In figure 2 is illustrated: (a) a valve as it actually is; and (b) as it is represented in a circuit drawing. Some valves differ slightly in shape and design from the one illustrated, but all consist of the three parts mentioned. There is also a four electrode valve which has two grids, but as this is only used in special circuits it need not be further mentioned.

Valves are used in three ways:—Radio frequency amplifier, detector and audio frequency amplifier.

Again referring to our last month's drawing, we see that a radio frequency amplifier increases the volume of the waves or oscillations before they are rectified. The detector valve, in conjunction with the grid leak and condenser, performs the same function as a crystal, i.e., that of cutting out one-half of the wave; while the audio amplified increases the wave; while the audio amplifier increases the volume of the audible waves.

In order to help in the explanation of the functions of the valve a simple drawing showing only the battery circuits of the valve is given (figure 3).

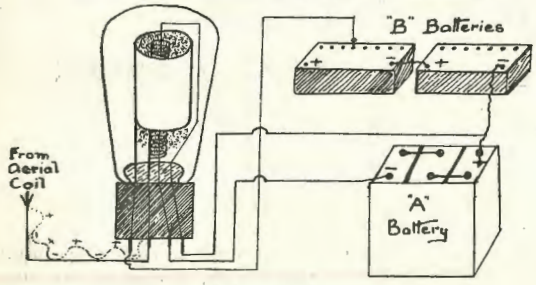

FIGURE 3.

When the filament is lighted by the current from the A battery it gives forth what are known as electrons, and if the B battery is connected as shown these electrons are attracted across the vacuum between the filament and the plate owing to the latter being positively charged from the B battery. The higher the voltage used on the B battery the greater is the attracting power of the plate of the valve.

The grid is used to control this current and is placed between the filament and the plate. It was explained that wireless waves surge to and fro in negative and positive impulses which enter the valve by the grid. It is well known that positive attracts negative, but that negative repels negative so that when the positive surge enters the valve by the grid it attracts the negative electrons from the filament to the grid. However, as the plate has a greater positive attraction, the electrons fly past the grid to the plate.

But when the negative surge travels on to the grid this repels the negative electrons from the filament and very few reach the plate. It will therefore follow that the positive surge will be considerably increased. The illustration will help to make this clear. This is a simple explanation of the use of the valve in radio receiving circuits. Next month the subject of this series will be "Fixed and Variable Condensers."

HERE'S SAMBO,

The clever coon impersonator and instrumentalist heard with Uncle Ben and Co. from 4QG.

His bright humor and infectious chuckles cause much amusement among listeners, young and old.

"All Australian Stations can be heard distinctly 400 yards from the Loud Speaker"

So writes an enthusiastic Queensland owner of a Five Valve Burginphone Set.
The Burginphone offers you the finest recreation from Wireless. And offers it with clarity and faithful reproduction.
There are any number of letters from enthusiastic owners we can show you.

SOME OF THE PRICES.

Junior Two, complete	£19 10 0
Junior Four, complete	35 0 0
Senior Five, complete	56 10 0
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Make a special visit to our Showrooms.

BURGINPHONE Wireless Receivers

AMICO (Queensland) LTD.
(Opp. Preston House),
364 QUEEN STREET, BRISBANE

The preliminary test (No. 1) of the W.I.A. reliability traffic tests is responsible for the great amount of enthusiasm now being displayed by amateur transmitters. The 80 metre band is alive every night with chirps and squawls, queer jargon in cipher and code from early eve to early morn. It is not unusual to hear one or two stations on any night, copying and transmitting code-cipher messages without QSZ's even though the other chap be some 500 to 2,000 miles away. These and a hundred and one other examples of efficiency and accuracy are proving that the ham isn't quite the ignoramus some commercial men would like to believe.

Of tests, more anon. A number of new fours are now firmly establishing themselves on the air. All of them appear to be experiencing no trouble with their outfits, and are punching out in fine style. Good notes of average "badness" and fair to good "fists"—some exceptionally good, are in evidence. We of ye mighty district four have therefore but little to apologise for.

4AW, 4BD and 4WE are a few of the welcomed newcomers; although not very strong, locally, they are putting some exceptionally fine sigs into distant States .

4CG has joined the ranks of the few select "heap clean-up" gang by working a score of Yanks with his new "7.5 watter." Seeing that he has been on the air for so short a time the performance is very creditable indeed. F.B. Cliff O.M.!

4WN has been on the air for some time, and is now reaching out far and wide. Their 80 metre sigs have plenty of sting in them, backed up with a bubbly but steady note of good quality. I have heard them QSO with most of the other Aussie States, bringing in good reports.

4WI's transmitter is still confined to 250 metres for Morse instruction. Some good DX reports are coming to hand, one from Samari. New Guinea reports the speech and music good earphone strength. 4WI is now on the air twice a week; on Tuesdays for Morse instruction, and Friday for general Institute business, lectures, etc.

4AN is now using a UX210 tube since the departure of his 250 watter. A quartz crystal is on its way from U.S.A. so the OM doesn't intend using up "juice" on a bigger bottle until the crystal arrives. The 210 seems to be raising the DX almost as well as the T250.

4CM has been off the air due to an accident to the generator, but, needless to say, his happy knack of acquiring things soon found him another, and he is now going strong again, as usual.

4GO and 4RB are using 210 "toobs" and report them fine little bottles with plenty of kick therein. "RB" has been much elated with the report, R6 to R7 from Swedish—SMTN is a recent QSO.

4MM now has a Z2A tube in the xmitter and threatens to raise the world as soon as he gets perking on 35 metres again. He has added a "bug" to his collection of keys on the operating bench, so if anybody wants some real thrills, call him up and ask him to QRQ!

Well, OM's, as my editor says, these notes are already late for press, it must here finis.

(Owing to a large amount of organisation work for the W.I.A. traffic tests, "XQ" has been closely pressed for time, hence the brevity of this month's notes.—Ed.)

"QUEENSLAND PASTORAL SUPPLIES" WIRELESS DANCE.

A novel and very interesting dance was given on Friday evening, September 17th, at Vaughan's Cafe, Isles Lane, by the Directors and Staff of the Queensland Pastoral Supplies Ltd. The music was wholly supplied by a Burndept Seven Valve Wireless Set, which operated three loud speakers placed in different positions in the cafe.

During supper time, 3LO Melbourne was tuned in and supper was enjoyed to the strains of the "Ham Johnson's Monte Carlo Band."

Altogether the evening proved a wonderful success both from a wireless broadcasting and receiving point of view and from a social aspect.

After the dance, Mr. C. Walker of Nerang, was so impressed with the Burndept Valve Set that he insisted on taking the set home.

At the special request of the Presbyterian Women's League this set is to be demonstrated at their meeting at Ballandean on Saturday evening, the 25th inst.

Back Numbers

of "The Queensland Radio News"

FOR SALE

July, 1925	March, 1926	PRICE
August, 1925	April, 1926	
October, 1925	May ,1926	3d.
November, 1925	June, 1926	
December, 1925	July, 1926	
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"Queensland Radio News"

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British

Burndept Wireless Leads the World

Representing the London Factory direct we now sell to you at London Prices plus duty. Take the following —

The Ethovox Loud Speaker, recognised by the trade as the very best Speaker on the market.

It reproduces the human voice to perfection.

Price was £9, direct purchase price now:—

Largest size	£5 15 0
Medium size	£3 0 0

The same with the Sets. The Workmanship, Packing, and everything perfect and in accordance with the best British traditions.

The 2 Valve Burndept Duplex, everything complete except Loud Speaker £12/10/--
The 3 Valve Burndept Triplex, everything complete except Loud Speaker £20
(Burndept Loud Speaker, £3 extra).

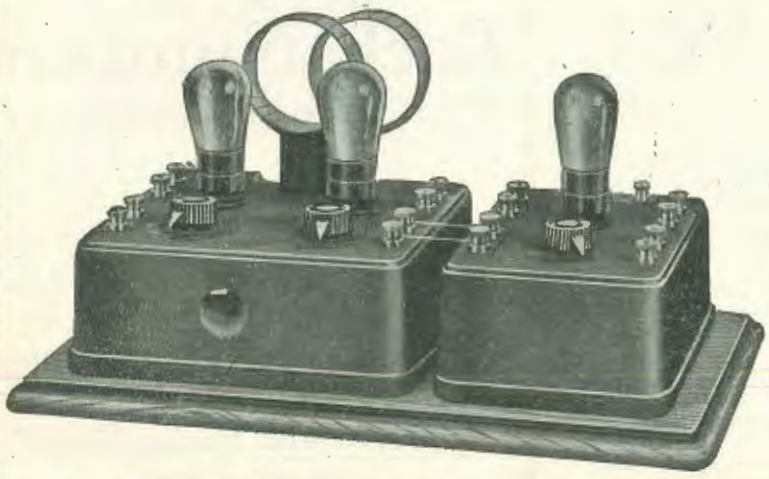
V. C. L. Harvey, "Fairview," Gore, writes, August 31st:—

"Re your 2 Valve Burndept Duplex Wireless Set. This came to hand safely. I have been getting very satisfactory results, 3LO, 2BL, and 5CL all coming in at very good strength."
"In fact I can hear all of them at a distance of about 20 feet from the 'phones—have also relayed 3LO and 2BL on to several of our neighbours some miles away by putting the head phones against the telephone transmitter. They all heard very well—this appears to be very good results from 2 Valves only. Going by the results I get they are certainly worth recommending, besides being reasonable in price."

P. H. Golder, "The Grange," Milmerran, writes, August 27th:—

"With reference to the Burndept 3 Valve Triplex Wireless Set I purchased from you a few weeks ago, I have to report that I am well satisfied with it, as I have received almost every night the following stations on full loud speaker strength, and with perfect clearness, 4QG, 2BL, 3LO, 2FC, 2KY, and last night I was listening in to 1YA (Auckland) on loud speaker.
"The set is all I could wish for, and Iam getting better results than most 4 Valve Sets are around here."

The 7 Valve Burndept Heterodyne Set has met with an overwhelming demand. For the pastoralist or Connoisseur in wireless, it is supreme. No outside aerial, no earth—can be carried from room to room—brings in all stations—right alongside 4QG entirely shuts out 4QG at will. Read the report of our Wireless Dance in this issue, where this set was used.



Write for latest illustrated list of wireless

Queensland Distributors for Burndept

Queensland Pastoral Supplies Ltd.

Bowen Street (off Ann Street),

Between Fire Brigade and Ambulance,

'Phones 5410, 5411, 5412.

Testing With America

Amateurs and Experimenters Prove Reliability of Short Waves

Fifty-three thousand words of official test messages found their way across the Pacific Ocean during the fourteen days of the Trans-Pacific Tests conducted by the Wireless Institute of Australia and the American Radio Relay League. The tests were organised in order to demonstrate the effectiveness of present-day amateur stations in communicating over distances of eight or nine thousand miles, and also for the purpose of discovering the most effective stations in each of the Australian States.

Three months have elapsed since the start of the tests, but log sheets and reports continue to arrive at Institute Headquarters from amateur stations in many countries. Though it has not yet been possible to complete the more technical deductions from the mass of information received, it is clear that amateur radio stations were able to maintain reliable and perfect contact across the Pacific through atmospheric conditions which were in all cases described as the worst experienced since the very short wave-lengths came into general use.

The chief competitive section of the tests, in which 97 Australian stations participated, was one in which stations had to send an official test message of 500 words to an amateur station in America and receive a similar one in the shortest possible time, and with the lowest power. In this test alone our Australian amateurs handled 50,000 words with errors which would be counted on the fingers of one hand—a truly wonderful demonstration of the abilities of amateur operators.

The finest performance of all stations in the Commonwealth was that of 7DX, owned and operated by Trevor Watkins, of Hobart, Tasmania. With a transmitter using half the power of that consumed by a household electric globe, and with a simple two-valve receiver, Mr. Watkins sent and received message after message without an error of any kind.

The leading performers in the various States were Victoria, 3EF, H. W. Maddick, Elwood. New South Wales, 2TM, H. Turner, Mosman, Queensland, 4AN, Leighton Gibson, Greenslopes, Brisbane.

Though acting as official traffic station for the Wireless Institute, and not competing, Station 2YI, owned and operated by Phil. Nolan, of Bellevue Hill, Sydney, made what is very probably a world's record for the reliable and accurate working of an amateur experimental station. Mr. Nolan was responsible for sending and receiving all the official messages concerning the conduct of the test, and in addition all progress reports and instructions since the tests. Just to "keep his hand in" during the intervals, he also handled a mere nine thousand words of test messages without a single error.

Commenting on the tests in a radio received from Hartford, U.S.A., the officials of the American Radio Relay League said in part: "Reports here all call attention to the fine signals and steady waves of your stations, and compliment your operators on the splendid way they handle key. The enthusiasm and interest of hundreds taking part was unbounded. The tests have undoubtedly been greatest success here since the early Trans-Atlantic communication tests."

Apart from the technical information gained, the tests have definitely proved that amateurs can handle bulk traffic with absolute accuracy across the Pacific, a fact which has not, until now, been generally admitted by other than amateur wireless interests.

TRANS-PACIFIC TESTS, 1926.

List of Australian Stations qualifying in Tests "A," those accomplishing both transmission and reception of 500-word message being arranged in order of merit:—

Receiving and Transmitting.

Special Service.—2YI.

General.—2TM, 2IJ, 2CG, 3EF, 3AD. Special mention by A.R.R.L., 3HL, 4AN, 7DX.

Transmitting Only.—2GS.

Receiving Only.—2BK, 2GW, 2JP, 2DY, 2KW, H, C. St. John, 2JY, 2BB, 2AB, 2LM, C. D. Roberts, 3WM, 3KB, 3YN, A. H. Reid, 5KN (No. 1 Air Station, Pt. Cook), 3SR, A. Bingle, M. Ireson, 4DO, 6KA, 7OM, 7AB.

Stations participating in general test observations, to the owners of which the Federal Executive Council of the Wireless Institute of Australia offers its sincere thanks for their work:—2YI, 2JA, 2RG, 2KW, 2BM, 2JY, 2WS, 2HM, 2TM, 2BB, 2MH, 2NS, 2RV, 2DY, 2IJ, 2CX, 2CG, 2ZX, 2LK, 2YH, 2EC, 2LM, 2BW, 2CS, 2SO, 2AS, 2KX, 2YB, 2FR, 2SS, 2AB, 2LO, 2RW, 2DJ, 2OB, 2JM, 2RC, 2GQ, 3GS, 3ZN, 3LP, 3QH, 3HL, 3ZR, 3GN, 3GM, 3VP, 3LS, 3YX, 3JM, 3WM, 3SR, 3LM, 3BM, 3BD, 3EF, 3AT, 3AD, 3KB, 3YN, 3CE, 3PJ, 3MY, 3JG, 3JR, 3XF, 3HH, 3OT, 3TM, 3SP, 4AN, 4DA, 4BN, 4DO, 4WH, 5DA, 5LF, 5BD, 5WA, 6LS, 6VK, 6BN, 7DX, 7PF, 7AB, 7GH, 7CS, 7BQ, 7OM, 7BC, 7GD.

In addition, the Federal Executive Council wishes to thank Mr. Phil. Nolan for his tireless efforts in handling all official traffic, and Mr. Trevor Watkins, 7DX, for sending in the most complete and most excellent log that it has ever had the pleasure of examining.

Announcement

Wireless Supplies Limited, Queen St., Brisbane announce that owing to increased trade they have been forced to move into larger premises. The address in future is Ascot Chambers, on the corner of Queen and Edward Sts., Brisbane.

Consequent upon the opening in these new premises a lot of new Electrical lines as well as a more varied list of Radio requirements has been added to the permanent stock. A catalogue is in course of preparation and will be free for delivery in a few weeks.

BARGAINS TO-DAY.

Indoor Spring Aerials	9/-	R.I. Detectors	10/6
Talking Tape Aerials	7/6	Advance .0005 S.L.F.	10/6
Spitfire Headphones	17/6	Ormond 0005 Vernier	12/6
Emmco Headphones	21/-	Erla 3 Valve Reflex Kits	£12/10/-
Brandes Matched Tone	30/-	Crosley 2 Valve Set	£4/2/6
Ericsson Cont. Phones	22/6	Crosley 3 Valve Set	£7
Lion Micro Detectors	6/6	Crosley 2 Complete	£8
		Crosley 3 Complete	£13

WIRELESS SUPPLIES LTD.

QUEEN STREET, BRISBANE.

Phone 3785 *Central*

Wynnum and Manly Radio Club

Official Opening of Club Rooms and Grounds at Wynnum South

The eyes of residents of the Wynnum district were directed heavenwards on Saturday afternoon, the 11th of September, the obvious reason for such an apparent display of piety not being very difficult to see.

Close to the Wynnum South Station, on Tingal road, there is now established a compact building of the corregated iron variety, surmounted at one end by a flag pole from which flutters a blue and green flag (the Club's colours). Running diagonally across the flag is the usual stereotyped lightning flash, which denotes to the public at large that wireless wizards are determined to snatch some of the never-ceasing ethereal disturbances which are passing unnoticed by each and every one of us.

If a flag did not disclose the identity of the premises, the tall latticed masts with a "sausage" type aerial slung between, towering above the building, dispelled any doubt which might have been entertained as to the objects the individuals concerned proposed to pursue.

In effect, the building and masts were the outward signs and results of the activity and energy displayed by a small band of local enthusiasts in the radio realm. They have chosen an apt motto: "We exist to learn and advance the science"—and if ever a motto was justly applicable it can never be more so than in connection with a radio club.

A Group of Visitors and Members at the Opening.

After months of hard toil by this enthusiastic band, under the leadership of the President (Harry B. Hogg), and ably assisted by the more enthusiastic members, Bert Mouland, treasurer, Pat Golden, secretary, Percy Lloyd, Les Edwards, Dave Bebbington, Frank Morton, Archie Edwards, Vic Dutton, Percy Shepherd, and Mr. S. Morton, the room and grounds presented a pleasing appearance to those visitors present.

Station 4QG, at 3.30 p.m. sharp, made a brief announcement which was recorded by the receiver at the club for teh benefit of those present, and was as follows: "Before proceeding with our regular transmission this afternoon, we have an announcement to make, which should interest many of our radio enthusiasts.

"At the present moment, the Wynnum and Manly Radio Club is being officially opened.

"The Wynnum and Manly Radio Club is a most progressive body, and has just completed some very fine club rooms at Wynnum South. It has erected two very fine masts, and has fitted its rooms and grounds very nicely.

"This station is glad to take the opportunity of congratulating the Club on its progressive spirit. It hopes that to-day's ceremony will be a very successful one, and that the Club will enjoy prosperity for many years to come."

Mr. H. Hogg then made a brief opening remark, and conducting Mr. J. W. Robinson to the front door of the Club, the latter performed the ceremony. Mr. Robinson told us quite a lot about broadcasting, and particularly its wonderful effect upon the improvement in the manners of the younger generation (it is learned that the local P.M.G. officials have had extra chains put upon the telephone receivers in the public booths).

Mr. Kington (President of the Wooloowin Club) drew, for all present, a pleasing word picture of the inter-club spirit which was desired by his own and kindred clubs.

The local member of the council (Mr. Dart) complimented the members on their achievement, and wished them every success.

In fact, success and good wishes were showered by all the speakers to such an extent that the Club secretary had his head so completely turned that he forgot the most important item on the programme.

Other speakers were Mr. Ablitt (Auchenflower Club), Mr. Jackson (Wireless Institute), Mr. Newnham (Eastern Suburbs), Mr. Keeping (Graceville Club), Rev. Mr. Shand and Rev. Father Kelly, both ardent fans.

Reference to capacity reaction controlled sets is superfluous here, except that such hook-ups are disliked by all club members.

Following upon the speakers, the ladies' committee, consisting of Mrs. Mouland, Mrs. Turley, Mrs. Hogg, Mrs. Lloyd, Mrs. Gorman, and Mrs. Golden dispensed tea all to all present, whilst the local band enlivened the proceedings with appropriate selections. The visitors then inspected the Club rooms, where several pieces of apparatus were on view, all being constructed by the members.

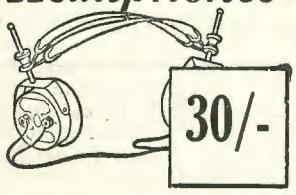
The visitors voted Mr. Percy Sherpherd and Mr. Bert Mouland the most popular entertainers of the afternoon, and in fact, the corner of the grounds in the shadow of the North mast was the most popular for quite a long time, until the popularity was all despatched.

For the present, the Club rooms are opened every Friday evening, and until the syllabus drawn up by the technical advisor, Mr. Pat Golden is approved by the members at the next general meeting, which will be held on Friday, October, 1.

Names to know in RADIO

Brandes

"Matched Tone" Headphones



British Manufacture (B.B.C. stamped).

All Brandes products carry our official money-back guarantee, enabling you to return them within 10 days if dissatisfied. This really means a free trial.

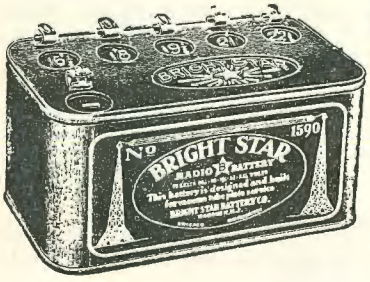
Brandola Speaker

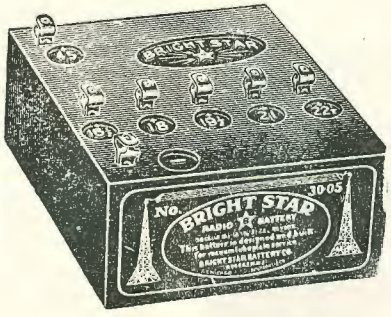
Through medium of the "Brandola" you will hear new beauty in notes that you've never before heard —never before thought possible. It is a master speaker for a master set. Better radio reception means a "Brandola."

£5/10/-

Table Talker 45/-

This handy Loud Speaker is attractive and effective. It gives the greatest value obtainable at the price—sales have proved this. Though only 45/-, the name Brandes is the buyers' assurance of a quality product for medium-priced sets.





Bright Star American "B" Batteries

The long life "B" Batteries which have won amazing popularity amongst Australian radio enthusiasts by their constant dependalibity. Heavy Service 45 volt., **26/-.**

Ask your Dealer for these lines

Home Radio Service Ltd.

Sole Queensland Distributors

FIRST FLOOR, COURIER BUILDING, BRISBANE.

De Forest

Famous DV3 and DV5

Valves

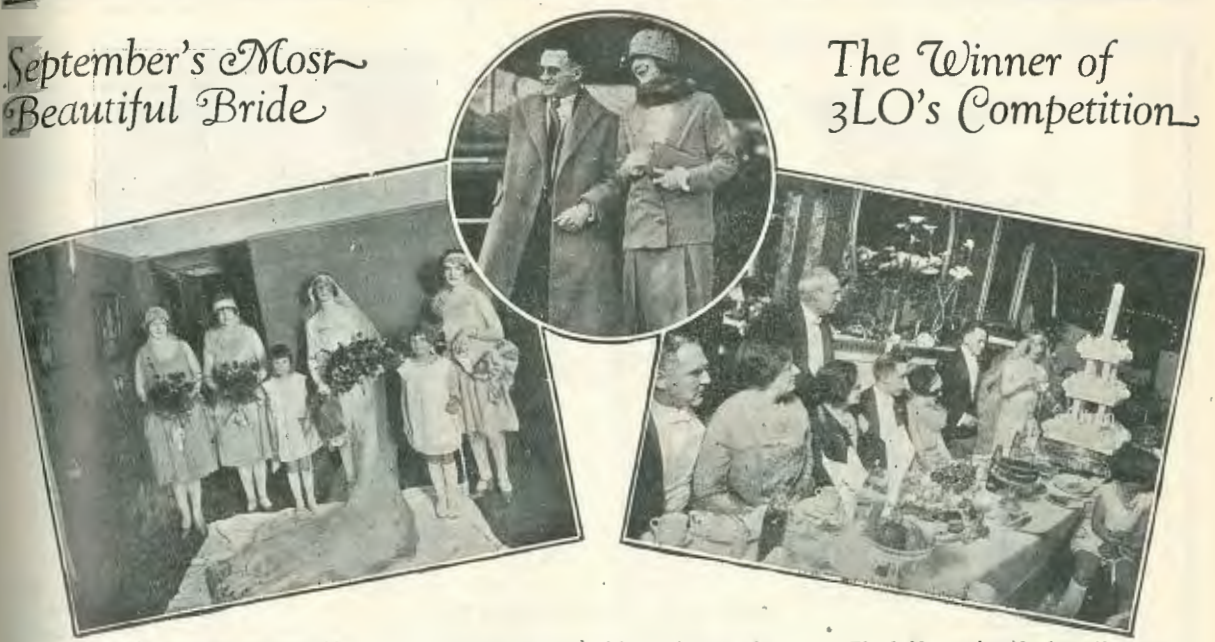
Made by the man who invented broadcasting. Try one on your set and note the remarkable improvement. They make good results better. Price, DV3 and DV5 **13/6.**

Radion Panels

The growing demand for Radion Panels by individual builders of radio sets and its extension adoption by manufacturers all over the world is further evidence of its predominant value. We invite critical comparisons — knowing their supremacy.

September's Most Beautiful Bride

The Winner of 3LO's Competition



The bride with her bridesmaids and train-bearers.

Waving "au revoir" to the crowds on the wharf from the upper deck of their honeymoon boat.

The bride cutting the beautiful cake —which was one of the many handsome gifts she received.

Station 3LO, in conjunction with a Melbourne newspaper recently conducted a unique competition in a search for September's most beautiful bride.

Widespread interest was created throughout Victoria, and hundreds of brides-to-be entered for the contest.

Prizes totalling £500 were offered the fortunate young lady who was judged by Mr. George Bell, the Melbourne artist, to be worthy of the blue ribbon.

The winner, Miss Thelma Crowther of 196 Drummond Street, Carlton, was described by Mr. Bell as "a girl blessed with a beautiful colour and hair of a wondrous red." The head only was judged, while the character and personality of the entrants were also considered.

Hundreds of Queensland listeners tuned in to 3LO at 7.15 on September 1st, to hear the service broadcast. The organ music, the buzz and excitement of those in the church were plainly audible for some minutes before the service began. The voice of the officiating clergyman was heard to perfection, while the eternal "I will" was registered emphatically by both bride and bridegroom.

The happy couple who are now Mr. and Mrs. W. H. Dando, left for Launceston the following day, receiving a wonderful send-off from crowds of people that thronged the wharf.

State-Wide Radio Ball

WYNNUM AND MANLY RADIO CLUB BALL, Star Theatre, Wynnum South, 17th September

The arrangements for this ball were undertaken with great care by the members. Eight Amplion AR19 Speakers, supplied the "row," and these were arranged in two banks of four series-parallel. The necessary "juice" was supplied from six banks of 24 volt Exide accumulators, and a six volt Exide 60 ampere hour, kindly lent by the Exide Battery Service. The receiver, a five valve Fada Neutrodyne, lent by Messrs. Trackson Bros., Ltd. did the job of picking up the melody waves from 4QG.

Arrangements, therefore, were perfect from the reception end, but it is understood that the members and their patrons for the evening were far from satisfied with the results. So much so that three-quarters of an hour's music was put over from 3LO, and the piano was requisitioned for twenty-five minutes, whilst 4QG discoursed upon the state of the roads, and gave us weather reports and news items. This, in turn, was followed by an interlude of four solos in the radio voice competition, which was the last straw in driving one party from the radio ball to attend a fancy dress affair at Manly.

Station 4QG would do well to adhere to its advertised programmes as far as a State Radio Ball is concerned, because any hope of revenue from this source is most assuredly knocked on the head.

COMPARISON FAVOURS OVERELLS

Special Offering of

Radio Accessories

We have just landed good stocks of the following lines. Many of these have been scarce of late, so this announcement will be read with pleasure by the many enthusiasts who have been enquiring for these lines. Our prices are right; you can see that from the following:—

CONDENSERS.

Ormond 0005 Plain	8/6
Ormond 005 Sq. Law	12/6
Ormond 0005 Sq. Law	15/-
Ormond 0005, 55 to 1 Ratio	25/-
Fortevox Glass Enclosed Detector	3/-
Yesley Micrometer Detector	5/-
Aerovox Glass Enclosed with Crystal	3/6
Hertzite Crystal	1/6
Neutron Crystal	1/6
DL5 Crystal	1/3
Coronet with G. & S. Whisker	1/9
Ebro 2 Coil Holders	8/6
Polar 2 Coil Holder	10/6
Polar 3 Coil Holder	15/-
Red and Black Battery Flex yard	6d.
7/22 Enamelled Aerial Wire, per 100	5/6
7/20 Bare Copper Aerial Wire, per 100	5/-

SPEAKERS.

Brown H.4	40/-
C.A.V. Tomtit	40/-
Baby Sterling	60/9
C.A.U. Junior	80/-

Arriving first week in October, a large shipment of English 4000 ohm Headphones. Price, 17/6.

Overells' Ltd.

THE VALLEY :: BRISBANE.

MISS JEANETTE ETHELSTON,
(Soprano),

who gave her farewell concert from 4QG on a recent Sunday evening, prior to her departure for America, where she is under engagement for a twelve months' tour. Critics forecast a wonderful future for this young Queensland artist.

ERRATA

The Selectrosonic Circuit

The following descriptive data was inadvertently omitted from the Selectrosonic Circuit Diagram on page 27 of this issue:—

Fig. 2.

"a," semi aperiodic coil; "b," .0005 condenser; "c," neutrodyne condenser; "d," coils in 3 coil holder; "e," .0003 grid condenser and 2 meg. grid leak; "f," .0003 condenser; "g," .001 fixed condenser; "h," three .5 mfd fixed condensers; "i," speaker plug.

On the same page, five lines below the list of components the corrected sentence should read:— "The two dials 'b' and 'f' are the .0005 and .0003 variable condensers. . ."

Central 1612. Day or Night Service.

F. NOLAN

Makes 1 Valvers from	£6	0	0	up
„ 2 Valvers from	£8	10	0	up
„ 3 Valvers from	£12	18	0	up
„ 4 Valvers from	£20	0	0	up
„ 5 Valvers from	£27	0	0	up

Advice on Alterations, Re-wiring, etc.,

All Saints' Rectory, Wickham Terrace, BRISBANE.

Genuine R.C.A. RADIOTRONS bear the above seal

RADIOTRON UX 199

Equally serviceable as a detector or as a high efficiency radio or audio frequency amplifier. Extremely economical in operation. Adaptable to dry battery operated sets.
Filament voltage 3. Current .06 amps. **Price 13/6**

RADIOTRON UX 201A

The standard all round flexible storage battery valve—good in any detector or amplifier circuit—sure to give the best results at the lowest operating cost.
Filament voltage 5. Current .25 amps. **Price 13/6**

RADIOTRON UX 120

New dry cell Radiotron for use in the last stage of audio amplification only. Exceedingly high filament emission. Volume equal to that of two UV199's.
Filament voltage 3. Current .125 amps. **Price 17/6**

RADIOTRON UX 112

A new power valve similar to the familiar UV201A, but several times as powerful. Designed for use as last valve in accumulator operated sets, when it will deliver far more energy than the average loud speaker requires. Two of these valves will give exceptional results. Filament voltage 5. Current .5 amps.

AT ALL DEALERS **Price £2/5/0**

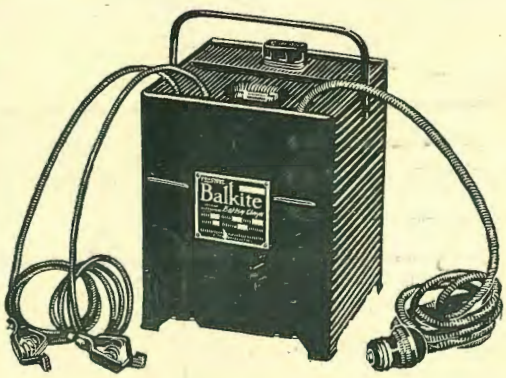
Amalgamated Wireless (Australasia) Ltd.

97 Clarence St., Sydney 167/9 Queen St., Melbourne
King and King Chambers, Queen St., Brisbane

Radiotron

Equip Your Set With the Famous

BALKITE BATTERY CHARGER UNITS



The Balkite Battery Charger

Over 150,000 of these Chargers are in use to-day. They are entirely noiseless and may be connected to the "A" Battery while the set is in operation. The charging rate is 2.5 amperes, delivering a taper charge which prevents damage to the battery through overcharging. Will also charge automobile batteries and Radio "B" batteries in multiples of 6 cells.

PRICE **£8-15-0** Complete

Something New—The BALKITE TRICKLE CHARGER

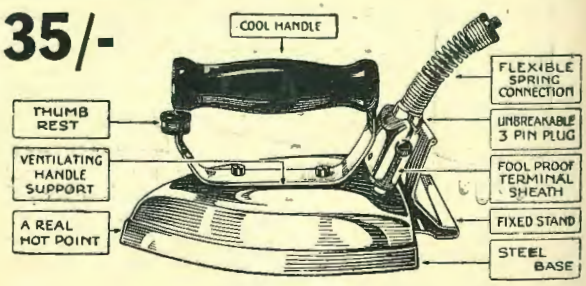
Provides "A" Current from the Light Socket

The Balkite Trickle Charger may be connected to any 6-volt radio "A" battery and left permanently on charge. As you use your "A" current the trickle charger automatically recharges your battery. For batteries less than 6 volts this charger may be used as a charger of the usual type. It is CHEAP—it is EFFICIENT. It occupies no more space than the ordinary dry cells. Stocks of this wonderful innovation shortly arriving. Ask your dealer about it.

PRICE **£4-7-6** ONLY

The **KOMET** **Electric Iron**

35/-



The Iron with the Strongest Element in the world. It is the only Electric Iron to carry a FIVE YEARS' GUARANTEE. British manufacture. Low current consumption.

If your Dealer cannot supply you come or write direct to

W. E. PETERMAN **Perry House, Albert and Elizabeth Sts., Brisbane**

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