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SIGNAL VARIABLE CONDENSERS.

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QUICKHEAT LEAKS, ALL CAPACITIES.

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BRANDES’ TABLE TALKER.

HOME ASSEMBLY SETS, One, Two, Three and Four Valves, See Advt. page 3.

BRANDES’ HEAD PHONES.

Q.S.A. CRYSTALS, at 1/6.

FROST HEAD PHONES, Three Styles.

FROST JACKS AND PLUGS, Seven Styles.

FROST CUSHION SOCKETS, 4 Styles.

FROST RHEOSTATS AND POTENTIOMETERS, Thirteen Styles.

SEE ADVT. AND PRICES OF FROST LINE ON PAGES 4 and 5.

United Distributors Ltd.
WHOLESALE ONLY

“Applause” Cards Furnished Dealers and Clubs Without Charge.

Manufacturers of

RADIOVOX SETS
A FEW TERRITORIES OPEN FOR AGENTS

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VARIABLE CONDENSER WEEK

Variable Condensers—
Amed. 12/6 18/6
Volmax 15/- 20/-
Galiliano 25/- 32 5
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The Advance 10/- 14/-

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Some sets are made to catch the people—ours are made to catch the music.
Volmax Loose Coupler Sets, complete—£1 10/-
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BROADCAST RECEIVING SETS

Our apparatus has been tested, and has given surprising results as far north as Townsville, and as far south as Hobart, and we therefore have much pleasure in placing our

GUARANTEED RANGE BROADCAST SETS

BEFORE THE PUBLIC.

ASK TO SEE OUR CORRESPONDENCE.

THE "VOLMAX" R.A.—One-Valve Set. Range 50 to 100 miles, used with headset. Prices, complete with all accessories—£12, £15 10/-, £17 10/-

THE "VOLMAX" R.B.—Two-Valve Set. Range 150 to 300 miles. Operates loudspeaker up to 20 miles. Prices, complete with all accessories, £25, £25, according to quality of accessories.

THE "VOLMAX" R.C.—Three-Valve Set. Range 300 to 500 miles. Prices, complete with all requirements—£35, £35

THE "VOLMAX" DE LUXE.—Four-Valve Sets. Prices, complete, £35 (table model); £75 (floor model).

USE OF DRY CELL VALVES.—Note: All the above Valve Sets can be arranged for the use of the new dry cell valves, thus making the accumulator unnecessary. However, should facilities for battery charging be available, ordinary type valves are recommended.

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Money on
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Equipment
Consult
Anthony
Hordern's
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Experts.

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New Radio Apparatus

The prospective amateur wireless set builder will be glad to know that the much-needed Frost line has now arrived in Sydney. This is a new line of necessary parts, such as sockets, rheostats, potentiometers, jacks, etc.

The rapid development and perfection of wireless throughout the world has led to the manufacturers of parts and equipment, who realize the necessity of exhaustive tests for efficiency, durability and simplicity in construction, and quality of materials used in such apparatus, begin placing their final product before the public. Replacing the above facts we will describe a few of the most important parts as manufactured by Herbert H. Frost.

The Frost 'Shock Absorber Socket' for standard 199 tubes, proves to be the long wanted improvement in socket construction to eliminate vibration and microphone noise, and by far the most important part is the set's silver plated contact. The Frost 'Shock Absorber Socket' is made of heavy gauge brass and is of the new type in which the tub e sits and makes contact with the four phosphor bronze contact springs is suspended from the metal base by the thickness of sponge rubber. Flexible wire leads are used to connect the contacts to the terminals, thus ensuring the tube always keeps its position from any outside vibration or shock.

A pleasing design, embodying these numerous scientific features should make the Frost socket very popular with the set builders, who want maximum results with unnecessary expense.

Rheostats and jacks are parts, the importance of which the average set builder is apt to overlook. Rheostats with loose, brass bearings or weak contact springs invariably cause an irregular flow of current through the filament of the tube, which produces sparking or spluttering noises when tuning.

In designing rheostats and potentiometers, Frost has utilised many ingenious ideas, and has standardised them throughout all the full range of plain and variable conductive rheostats and potentiometers. This heavy threaded brass bearing has been cast in bakelite mould, and is used as a shaft bearing and mounting block, so by drilling a hole in the radio cabinet panel, the rheostat or potentiometer can be mounted securely by the standard jack nut (which is supplied with each box).

A strong spring is brought in contact with the end of the shaft, ensuring a perfect contact.

The newest feature in the Frost line is a combination of variable rheostat and potentiometer, called in United States slang, 'the pot shoe.' The mounting features are the same as described above, but an additional shaft and knob are used, giving separate control of either rheostat or potentiometer. This 'pot shoe' can be used to advantage where concentration of space and money is necessary.

All metal parts of the Frost line are heavily nickel-plated and highly polished, large terminals are used throughout, and there is a rheostat and potentiometer for every need.

Frost plugs and jacks are standard, the jack is highly polished and nickled silver springs with silver contact points are used. Each spring is separated by a fixture, thus ensuring against a leakage.

There are also three types of the famous Frost 'phones.' These loud speaking phones are treated with copper to avoid corrosion through moisture or salt air, making them extremely suitable to the climatic conditions of Australia.

There are also other Frost products, such as push-pull switches, tuning coils, adaptors, etc. They are all equally made and the general appearance of refinement and strength should establish its sale with the amateurs and manufacturers alike.

The United Distributors are the exclusive distributors, and the lines are advertised on page 77. The Frost line are sold at one fixed price by all large dealers. Call in and look it over. It has many new features.
**SIGNAL Home Assembly Sets**

---

**Model Phone valve, £5-10-**

**Model Q. 2 valves, £9-9-**

**Model R three valves (Audio Freq) £11-11-**

**Model S three valves (Radio Freq) £11-11-**

**Model T four valves (Radio Freq) £13-13-**

---

**Make It Yourself**

The SIGNAL HOME ASSEMBLY SETS are designed to meet all demands for complete sets ready to be assembled. Simply constructed, and yet efficient. Each set contains all the parts necessary to construct the set proper. All contained in an attractive oak cabinet, mission finish, with engraved Bakelite panel all bored ready for mounting the parts.

INSTRUCTIONS and a clear diagram make it very easy to assemble these sets.

BOYS, YOUNG and OLD, here you can get all the thrill and satisfaction of MAKING YOUR OWN, and SAVE HALF THE COST

ASK YOUR DEALER FOR "SIGNAL"

and if he has not yet stocked it write us

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(WHOLESALE)

28 Clarence-st., Sydney  592 Bourke-st., Melbourne
FAMOUS FROST PARTS

THE MOST COMPLETE LINE
RADIO PARTS EVER
ONE PRICE

FROST SOCKETS

613 SINGLE SHOCK ABSORBER SOCKET, for Standard Valves 6/3
617 SINGLE SHOCK ABSORBER SOCKET, for UV199 and C290 6/3

(All above sockets are made of Bakelite and have sponge rubber cushions.)

612 BAKELITE SOCKET, for C290 and UV199 Valves 8/6
619 3 GANG SHOCK ABSORBER SOCKET, for Standard Valves 24/6
616 3 GANG SHOCK ABSORBER SOCKET, for UV100 C290 34/6

FROST RHEOSTATS & POTENTIOMETERS
COMPLETE WITH TAPERED BLACK BAKELITE KNOBS,
METAL PARTS HIGHLY MACHINED, KNEBBLED TERMINALS,
TYPICALLY PERFECT.

650 RHEOSTAT, 6 ohm (Maroon Bakelite) 7/6
651 RHEOSTAT, 6 ohm Verder (Maroon Bakelite) 7/6
652 RHEOSTAT, 15 ohm (Maroon Bakelite) 7/6
653 RHEOSTAT, 15 ohm Verder (Maroon Bakelite) 7/6
654 RHEOSTAT, 6 ohm Metal Frame 7/6
655 RHEOSTAT, 15 ohm Metal Frame 7/6
656 RHEOSTAT, 240 ohm Metal Frame 9/6
657 RHEOSTAT, 350 ohm Metal Frame 9/6
658 RHEOSTAT, 600 ohm Metal Frame 9/6
659 RHEOSTAT, 1200 ohm Metal Frame 9/6
660 RHEOSTAT, 2400 ohm Metal Frame 9/6
661 RHEOSTAT, 6000 ohm Metal Frame 9/6
662 POTENTIOMETER, 400 ohm (Maroon Bakelite) 9/6
663 POTENTIOMETER, 400 ohm Metal Frame 9/6
664 POTENTIOMETER, 1000 ohm Metal Frame 9/6

FROST MISCELLANEOUS

301 EXTENSION CORD, complete with Adaptor and Plug, 50ft 22/6
459 LOOSE COUPLER or Receiving Transformers 75/6
110 CRYSTAL TUNING COIL SLIDER (1100 meter range) 27/6
253 RADIO JACK BOX (for 12 sets) 23/6
457 ADAPTER, for C290 or UV199 5/6

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ALL DEALERS

FROST JACKS AND PLUGS
NICKEL PLATED, FORMICA INSULATION, NICKLED SILVER CONTACT SPRINGS, PURE SILVER CONTACT POINTS

<table>
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<th>Item</th>
<th>Price</th>
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<tbody>
<tr>
<td>OPEN CIRCUIT JACK</td>
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<tr>
<td>DOUBLE CIRCUIT JACK</td>
<td>5/</td>
</tr>
<tr>
<td>FILAMENT SINGLE JACK</td>
<td>6/</td>
</tr>
<tr>
<td>FILAMENT DOUBLE JACK</td>
<td>6/</td>
</tr>
<tr>
<td>NEUTRODYNE CIRCUIT JACK</td>
<td>6/</td>
</tr>
<tr>
<td>PLUG, DOUBLE (2x connections)</td>
<td>5/</td>
</tr>
<tr>
<td>PLUG, SINGLE</td>
<td>4/6</td>
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FROST MISCELLANEOUS

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<tr>
<td>RESISTANCE UNIT, 35 ohm (to increase resistance)</td>
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<tr>
<td>INDUCTANCE UNIT (to increase wave length)</td>
<td>5/</td>
</tr>
<tr>
<td>POTENTIOMETER SWITCH</td>
<td>5/</td>
</tr>
<tr>
<td>PARALLEL SWITCH</td>
<td>4/</td>
</tr>
<tr>
<td>PUSH-FULL BATTERY SWITCH</td>
<td>4/</td>
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FROST HEAD FONES
STANDARD THE WORLD OVER

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
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<tr>
<td>FONES (Aluminium Head Pieces), 2500 ohm</td>
<td>3/6</td>
</tr>
<tr>
<td>FONES (Aluminium Head Pieces), 3000 ohm</td>
<td>37/6</td>
</tr>
<tr>
<td>FONES (Marcon Bakelite Head Pieces) 3200 ohm</td>
<td>35/</td>
</tr>
</tbody>
</table>

THE MAGNETS IN FROST FONES ARE TREATED WITH COPPER TO PREVENT CORROSION BY MOISTURE AND SALT AIR.

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Perth Brisbane Adelaide Melbourne
AERIAL WIRE

There will shortly be an enormous demand for 3/20 Aerial Wire
If you would have stocks when the rush comes, NOW IS THE
TIME TO ORDER.
Deliveries will be effected in sequence of orders received.
WHOLESALE ONLY — Drums 3960 yds.
144 lbs.

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OUR SPECIAL LINE
PEERLESS
Head Phones
2000 Ohms.
30/-

"REFLEX" Loose Coupler Receiver
£3-15-0

Complete Set of Parts to make the above Set 36/6
Postage 1/-

RADIO HOUSE
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VARIO-COUPLES
MAKE YOUR OWN FROM GRODAN PARTS

As recommended by
"Insulator"
Wireless Weekly,
June 27

MANUFACTURED BY GROSE & DANIELL, SYDNEY
IN TWO SIZES AND STOCKED BY THE PRINCIPAL DEALERS
ASK FOR GRODAN BRAND

ANNOUNCEMENT

We are pleased to notify our customers, both Wholesale and Retail, that we are now ready to quote for the erection of aerial masts from 30ft. to 200ft. in either Wood or Iron, also for flags of any design.

E. H. BREIT & SONS LTD.
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Phone W 1205
Something new in Australian Manufacture

THE COLVILLE-MOORE WIRELESS SUPPLIES LTD.
10 ROWE STREET, SYDNEY

Phone B 2261 (Sales and Office)  Phone B 1721 (Works)
Something New in Australian Manufacture!

VARIABLE AIR CONDENSERS

THE HEART OF THE TUNING TUNI

Effective Tuning is Only Possible with the Condenser of Low Radio Frequency Resistance.

TYPE 53U. VARIABLE AIR CONDENSER.—A better class highly efficient and inexpensive condenser for the radio experimenter.

ENDS: MOULDED BAKELITE.—Beech bushed ends.

PLATES: HEAVY ALUMINIUM PLATES.—Concave in design, providing an extremely gradual variation in capacity, and making this instrument suitable for accurate calibration or wave-meter work.

CONTACT: POSITIVE SPRING CONTACT.—Ensuring perfect connections, with movable plate.


FINISH: NICKEL PLATED.—Beech and aluminium finish.

VERNIER. TYPE 53B. is equipped with a three (3) plate attachment, allowing minute capacity variations for fine tuning.

TYPE 53B.—3 Approximate Capacities, 0.000.675, 0.062, 0.067

Type 77.—A highly efficient variable air condenser, of rugged construction. Similar in characteristics of type 53, except that the end plates are of heavy aluminium, hand rubber bonded. Fixed mounting by three holes, similar to telephone jack. In two capacities only.

TYPE 77A.—02 Plate Capacity, approximately 350 M.M.F. (39655 M.F.)

TYPE 77A.—04 Plate Capacity, approximately 1100 M.M.F. (5061 M.F.)

The Colville-Moore Wireless Supplies Ltd.

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Radiola Headphones for Natural Reproduction

Radiola Headphones meet the demand for high-grade Receivers at a moderate price. They are of robust British manufacture, are comfortable in use, and give that perfect reproduction of speech, instrumental and vocal music and code signals which is so essential in wireless Headphones.

Each set of Headphones is fitted with an adjustable leather covered band, which fits comfortably on the head.

STANDARD RESISTANCE 2000 OHMS - PRICE **39/6**

Obtainable from all Radio Dealers

If any difficulty in procuring, please write us direct

Amalgamated Wireless (Australia) Ltd.

"Wireless House," 97 Clarence St., Sydney
"Collins House," Collins Street, Melbourne
AUSTRALIAN ABILITY

The recent controversy regarding the building of Australian cruisers reminds us that since the days of our early history we have had with us a gang of pessimists whose slogan has ever been, "We can't do it in Australia."

In the world of Australian wireless, as in every other industry, there are many who persistently raise this cry directly anything new is mooted. They winked at the very idea of broadcasting being successfully conducted by Australian enterprise. They regard the Australian amateur as merely following in the footsteps of his American cousin. The whole wireless industry in fact, according to them, is simply moulded up by developments abroad. It would be well to briefly review the situation as it actually is.

From a broadcasting point of view little need be said. High grade services have been conducted for months from stations designed, erected, and maintained wholly by Australians.

On the word of no less an authority than the Fleet Wireless Officers of the British Special Service Squadron, we are assured that Australian coastal stations are, under actual working conditions, the most efficient in the world. The majority of the vessels of the Australian Mercantile Marine is fitted with wireless apparatus built in Australia. On such apparatus the operator of a Trans-Pacific liner established a record for long distance working which has never been approached in any other part of the world.

Several pages could be filled with the records of the achievements of Australian amateurs. Competent American and British observers openly assert they are amazed at the extraordinary distances covered in low power transmission and in reception by our amateurs. The Trans-Pacific tests conducted by C. D. Macaroun must remain for all time a monument to that efficiency which compels fair-minded people to admit that Australian amateurs lead the world.

It is evident, therefore, that no matter what wireless problems, either professional or amateur, which may confront us in the future, we have in Australia men with the initiative and the ability to overcome them. We can do it in Australia.
Wireless versus Cables.

(BY MALCOLM PERRY)

In dealing with this subject, and one in which several issues of "Wireless Weekly" could be taken up in order to make fair comparisons to both sides, I want the reader to remember that I have only been allotted a limited space, and consequently a number of my arguments must be cut very short. Arguments and facts are something like weak signals in wireless; you have to amplify them in order to fully understand them, and I am limiting it to the reader to put on two stages of audio whilst I do the detecting.

If you were asked, "Which is the more efficient, the horse or the motor car?" you would on free-thought answer, "the motor car," whereas daily observation shows that both the bread, milk and vegetables are delivered per cart and horses, and therefore for these purposes the horse must be more efficient; for motor cars can be obtained, but tradition will not use them. Two factors come into operation here, one, time, and the other cost.

Let us now consider the position of wireless as opposed to the cable, or I would rather say, in conjunction with the cable. Before war we had several cable men in the Wireless Institute, and many were the discussions that we had as to the advantages and disadvantages of both wireless and cables. The result was that I obtained a fair knowledge of both systems, and I think that having seen wide and direct wireless communication been possible in those days, then wireless would have been a long way in the lead, but that, assuming that cable working made no advancement. At the termination of war, we marvelled at the wonderful strides wireless had made (naturally we did not know what development had taken place on account of war precautions); but I was assailed at the great progress the cable had made. Before war messages being despatched to London by cable were delayed from six to eight times, the number of times varying according to submarine conditions, whereas we now had only two half-relays taking place, and that only for the purpose of checking of messages on route. These changes have come about by the development of special automatic relays, which have simply been inserted in stations where hand-relaying was done before. Apart from this it is quite possible to construct a cable to operate direct from London to Sydney. Without going into that here, again, the factor cost arises. Cables and wireless are just like trains; it does not always pay to run trains when passing passengers can be picked up on route.

Let us now consider the case for wireless. At present we have no direct wireless communication with London or other parts of the British Empire. Experiments have recently been carried out between London and Sydney with short wave telephony, and communication has been established. The thought naturally arose in the experimenter's mind regarding the number of hours per day that such a system can maintain two-way working. Mr. Macfarlane's trip across the Pacific proved that night range was five times that of day range with low power about wave transmitters, although there is a possibility of this variation changing with the use of higher power. Then again comes the question of the number of words per minute that can be handled. I understand that the normal automatic working speed of the cable is about forty words per minute, and that this can easily be increased to 100 words per minute when traffic is heavy.

If wireless is to successfully compete automatic working would naturally be adopted, although this is not altogether necessary, but to say whether one system or another must be adopted simply depends upon the cost. After all working, however, has a much greater degree of secrecy, a point which cannot be overlooked. Just here it is important to mention that the wireless engineers who took part in the tests at Bude were vary well the past of these sounds, which were audible in their receivers. Say, for example, it is possible to erect a five watt station and maintain two-way communication with London for only 30 minutes in the 24 hours, then such a situation would have to be closed efficient in comparison with cost.

The greatest advantage that wireless has is that waves cannot be cut like the cables although an enemy station could not cut a considerable amount of Q.R.M. thereby stopping messages from being received. When the readers to know that lashing the German signals, caused a number of the Zeppelin's to lose their way nearer readers will marvel several landing in the south of France and other distant seas. But all these ships were using comparatively short wave lengths which are very easily jammed out.

Australia badly needs a wireless station to communicate direct with London for defence purposes. Now that the British Government have partially abandoned the Submarine base, the question becomes more urgent. How again our old friend Harrisons comes to mind. And a powerful station, with a wave length of 30,000 meters, could not be easily jumbled out; it would get through the day and night. It would use a considerable amount of time, and money for an enemy to upset a station to jam out a long wave station, and if he succeeded in doing this, we would still have the harmonies to fall back on.

Cables versus wireless for commercial purposes simply boils down to the factor, cost. The factor, time, can be eliminated. Both can carry out the same functions of handling traffic otherwise.

Sometime Mr. Macdonald has suggested that should we use times for communication with Australia will be quite suitable, and his proposition is quite alright from a commercial point of view. If one short wave station can only maintain communication for a period of six hours, and traffic is too heavy, it is a simple matter to erect another station, on another wavelength, duplicating the service and so on, the only limit to the number of stations being the cost and the revenue.

But a new point crops up here. The greatest bend of wave lengths is from 100 to 250 metres, and in order to provide commercial work, we may look to a change of wave lengths and concerns the antennas. At any rate, whatever happens, it must be to the everlasting credit of the experimenter that he has shown the world what can be done with wave transmitters on short waves, and this fact alone must justify the existence of the experiment for all time.

Wireless versus telegraphs overlooked. However, this is a subject that is very long, and I think there is a great possibility of wireless seriously
Amateurs v. Broadcast Listeners
WAR OF THE FUTURE

A lot of us no doubt have long shared the opinion that, compared to his Australian counterpart, the American amateur enjoys the privileges of a kind of wireless paradise. In many respects no doubt this is so. In the first place our friend over in “God’s own” is singularly free from the kind of blink which our local amateur is burdened with in the way of Government regulations. He is not posted to death with the uninviting attentions of the honorary inspector who drops in to have a friendly chat about the use of certain circuits. No need regulations about the use of reputation came him to take to the woods with hisanten super relay equipment and do his experimenting to the honest sounds of the early moron-mowers. He is not cursed with a certain amount of currency just because he feels a desire to assist in the great and glorious cause of science.

In the words of Mathewiah, “No, boy.” All he does if he wants to develop into a real wood-wood amateur is to climb up on to the roof top and hail to the world, “Say, folks, pipe you years truly as an amateur,” and they don’t sing him a single cent for it. He simply sits down in front of his twelve “kicks” hand-daguerrean one evening as a broadcastee—the amateur living him good and hard—and, lo! in he is no more a mere listener, but an honest產品 “amateur.” No forces to fill in, no waiting on the radio inspector’s door mat while he views with a frowning heart the trembling knees of the victim ahead of him. No waiting three months while his application is being chewed over by the head boss at Washington. That is—if he wants to be a receiving amateur.

For the guy who feels the thirst to maintain a little distance via the microwave route there are a few minor formalities to be observed before he is permitted to try his cause. A set of such technical questions existing amateur transmitters are shown and he is asked to kindle step forward and say what’s what; also, to show a few words in Morse. Upon successfully passing this “exam,” he is presented with a crankly new license, and is required to take the oath of secrecy. All this knocks him back the colossal sum of 30 cents, which in British currency is somewhere in the vicinity of the price of a couple of weeklies. And so I come to the station. And here stand no fool regulations limiting him to a power of ten watts.

No, sir, anything goes in this amateur paradise—that is, anything up to the limit where the pocket begins to show signs of calling it a day. And in a little while a stop operator down in the Gulf of Mexico waves that wonder like a new Traverse station.

All of the foregoing only serves to clearly demonstrate that the American amateur is permitted to live up to the spirit of those immortal words uttered by an American citizen during the Yanks-British war of a couple of hundred years ago. This lovely kind was a prisoner aboard a British frigate during a naval engagement, and when the revolutionary shells dropped incomparably closer to his temporary abode, he shoved his head out the porthole, and waving the stars and bars shouted that cheerfully about “The Land of the Free and the Home of the Brave.” Whether some pseudo went on deck and mutually dropped a benediction on his brow is not on record, but nevertheless he was a good fellow, and as has been shown the spirit of his remarks on freedom is today clearly interpreted by American “raamer.” “The Land of the Free” is right.

That it is rapidly becoming the home of the Brave however is fast becoming a thing of the past and the time is not far distant when the transmitting amateur will be loved to his walk in the company of a squad of cops and with a beard travelling close behind. He is seen in: he is an atheist: something to be searched at and cursed by the very people whom, in his colonial opinion, only a few short years ago he referred to briefly as “mops,” “flicks” and “coons”—the broadcast listeners. Looking abroad a little it is not hard to visualize the time when, to the terminal slow music, the last of that once merry
rolling band of transmitters will file slowly past an infatuated throng of broadcast listeners, to be torn to pieces by the cultures of New Mexico. Twelve months hence it may be reassembled with bated breath how a transient visitor to the powerful home of a broadcast listener and boldly announcing himself as the owner of the 2kW tube set in the next block, lit the Daniel marching powder in the love's den will be a joke to him.

Here's the how of it.

Up to the advent of broadcasting, the amateur, aside from the commercial stations' operations had things all his own sweet way. Nightly he paraded his voice before the admiring ears of brother adventurers all over that great and glorious country. The world was his! The plain ordinary non-amateurcitizen regarded him as the wonder of the ages—until one by one the towers of broadcasting stations towered themselves in the cities—and later on in the smaller towns.

Sweet music was on the air, cultured voices spoke entertainingly of cubbage and kings and the political crisis of Isherwood. Quickly Ordinary Citizen realized that there were hundreds of "those wireless receivers" in his home he could sit by the fire of winter evenings and listen to it all merely by twiddling a couple of dials. He sought out an amateur and he was acquainted with and shilly-shally asked him his opinion upon what to buy. Indulgently, kindly and as gentle as a good dad, our amateur pal explained the working of a three-tube heterodyne, and if there's a force of conscience in his home—well, who could quarrel about that?

So our ordinary citizen proceeded to the business and in a little while the outfit was installed on the dining room table. Results at first were not too good. Faint strains of music were audible and for half an hour the family sat round the table, each other while dad listened, with a worried look on his face. Then by, pa accidentally discovered that by moving the home-comb coils closer together the music came to louder and by turning up the volume a bit the phones could be held on the table and all hands could listen.

This was fine! All went well until the phone rang and a wild voice spoke, "Say, for the havemike, turn off that contraption and give me a chance to raise 1408 in Missouri!"

So with a sigh pal appreciated it all right in the middle of a beautiful rendition of "Love's Old Sweet Song." By Lucka Poultzki, Warraway (formerly Beniss Hicks, of Hillsville) now pa didn't know his art was reawakening. He just took it for granted his amateur friend was an expert and that in some way he was treating upon the tender cords of the fans, who loaned the cither. Well, this occurred several times, and pa was just beginning to wonder just what use his outfit was when one day the paper announced a special transmission from station WXX of that swell-stirring "Dreamers." "Drummers from Home," played by the Bright Light Co. Promptly at 8 p.m., pa tuned in and the family gathered around listening captivated to the sweet melodies of the beautiful heroine. Right at the point when the storm stage father impuned, "Don't go home forever!" the phone rang. Pa stirred restlessly. He knew what it was. That darned amateur again. Somewhere in the depths of pa's brain was stirred the first faint thralldom of the old spirit of independence. "They've won the war. Grabbing the receiver off the bureau hands," "Say, you go to blazes; I got as much right to the air as you do," quaked the housewife. It started. It was the first shot in the war between the amateurs and the broadcast listeners.

Swiftly the news spread that a mere broadcast listener had thrown the gauntlet right in the teeth of Paul Schenberger, the owner of station ZLT, the fellow whose phone had been heard in every state of the Union, and who's W.C.W. was read by the operator on a ship sailing in Puget Sound. Paul came back by writing a dignified letter to the paper explaining how these broadcast listeners were interfering with six amateurs by using coherer receivers; how the amateurs were doing fine before broadcasting started and the R.L.'s, should all be made equal anyway. Back came the answer from an infatuated B.L., who lived two doors away from an amateur transmitter. "Why's the heck should these fellows be allowed to drop their QO calls around in the middle of broadcasting? Who were they, anyway? Was it a free country? The amateurs may be a decent crowd, but in his opinion they ought to be exterminated." So the coherer grew and spread swiftly until every amateur transmitter wore a vender on the whole crowd of B.L.'s, and the B.L.'s pledged themselves to feed off the shoulders of those who listened in on their nightly entertainment. Even the K.K.K. became fascinated with the various disapparances of Herman K. Backhouse—a dinkum American transmitter, from his home at Scotia City (Tex.), caused the pallid band of amateurs to panic and wonder where they were. 100 fans of B.L.'s, meteored by the hands of those at whom they had once looked, they called a half while the white flag fluttered in the breeze over their stronghold. The chief "fans" persuaded with the leaders of the B.L.'s. The pipe of peace was smoked. Then forth went the message, broadcast across the whole country. The amateurs would keep off the air until after 10 p.m.

There was rejoicing. Jockeys rang on their sweet song and to the accompaniment of special announcements from every broadcast station, peace was declared with a decided victory for the R.L.'s. So things were more pursued the even tenor of their way.

All went well until quite suddenly a bolt from the blue descended in the form of a special transmission of the June 24th of the Hotel La Belle at Chicago, from 11 p.m. to 1 a.m. This was quickly taken up in hotels, until a chain of broadcast jazz was woven throughout the country. The jazz bands blared across the cities; the last acts of plays were borne faintly across the Rockies; the broadcast announcers sang the songs of Paul Schenberger.

And through it all the blith blith of the amateur transmitters on their after ten experiments sounded like the hoots of Hades. Things were as nice and harmonious as a half flight.

The multitude stirred restlessly and there was the subdued murmuring of many voices. Suddenly; from a small town in Illinois came the distant echo of the first shot. A B.L., with righteous indignation standing from his pew, climbed up on a manger of George Washington and told the world how the boy with the tube set on the outskirts of the hump was poisoning the broadcasting atmosphere. Quickly he was surrounded by a cheering crowd of B.L.'s. To the strains of "Hall of Columbia" and "Raging
Through Georgia, the seething mobs, bearing a pall of tea and a bag of feathers, advanced on the home of the "Ham." However, he saw them and, acceding to the local paper, was last seen disappearing into the tall fir trees two days ahead of the Sheriff. And so the war was on, and according to latest advice in still.

News from the front filtering slowly through, tells of the mighty struggle going on. It seems as though universal brotherhood, sworn to stick together and to blame everyone on the amateur. If the set of a neighbouring B.I. recovers the "Hams" and insures with a programme—well the amateur. If the broadasters agree to close down for an hour to enable the amateurs to get over a trans-Atlantic test—yes him again, only harder. If the amateurs, as seems likely, agree to close down until midnight—yes him again. Someone might, he thought broadcasting from midnight onwards and, anyway there's more B.I.'s than "Hams," and the latter doesn't count much, why don't they shut down now and point, and listen to broadcasting, instead of sitting up all hours trying to raise some other plug a thousand miles away just to pose remarks about "modulation," and other things which are all Greek to any ordinary ear. B.I.? If some commercial station ten miles away bailed them in, then the B.I. is listening on his new twelve "bath" reflect—so that it was three blocks away, it must be him. If the amateur tries to explain in his own words how he handles his set without causing interference to others. If B.I. will pluck up the courage to step the trouble. In the words of Bowery Bill, "Goldbooks: this amateur is a seamy knave!"

So it goes on. Friend "Ham" little dreamed that when he played his gramophone records some day, that putting into the hands of the big manufacturers the idea of organised broadcasting, he was instrumental in creating a mighty force which would eventually sweep him and his transmitters into the deep blue sea without his looking once seaward.

While, as was mentioned in the beginning, the point of view of Government interference, our American friend lives in a state of world peace, there is no doubt that so far as his future is concerned, he has lost one step removed from that other place which is generally conceded to be the destination of those who stray from the straight and narrow in this world.

What will be his fate? Resumed in by millions of B.I.'s whose every hand is against him; blamed for everything that happens to interrupt the harmony of broadcasting: raked by the guns of the broadcast press; one can imagine him setting up his transmitters on top of the highest mountains from all manmade and severe from the six-parties of his implacable enemy the B.I. Or perhaps no longer his race, skulking like the pariah dog of Constantinople, around the darkened streets, catching his dinner from the homeless garbage only, ekking out a miserable existence until one sick night vengeance, swift and terrible, overtakes him. When the last is gone, then will come the catharsis. The ravages of B.I.'s, thirsting for the blood of more victims, will fall upon each other. Armed with loud speakers and power amplifiers they will sweep the country and all will be chaos until the last remnants of the B.I.'s will stagger blindly into the deserted streets—and over all will settle that peace which is eternal.

INTERNATIONAL LANGUAGE

We are in receipt of a special wireless number of International Language, the journal of the Esperanto Society. This contains a number of remarkable interesting articles by authorities illustrating the need for some language in broadcasting common to all, and showing how the International character of broadcasting of the future is inevitably linked up with Esperanto.

An article by A. B. Burnson, Director of Programmes of the British Broadcasting Company indicates that the necessity of amounting items in other languages besides English is realised by so high an authority as the Company itself.

So much has been written and said concerning the possibilities of International Broadcasting that, in the clatter of words we are apt to overlook the message behind them. A few points of reflection, however, should be considered. It is generally understood that wonderful things are yet to be accomplished in the direction of world harmony by broadcasting. A thorough study is in order when we consider that a broadcasting station in London may have an audience representing every nation in Europe. Imagine in the future a speech on some vital international topic being broadcasted over the whole of Europe in a language easily understood by all.

Talks in Esperanto have already been broadcast from such famous stations as 2IA, London, WJE (Newark, U.S.A.); Gorizia (T.N.) and there are regular talks from Moscow, Prague, and a Canadian station. Amateur transmissions in Morse Code in French, English and Esperanto are made by Dr. P. Correct, of Versailles.

NEWCASTLE GETS K.G.O.

Mr. E. T. Swain, of Everton St., Hamilton (Secretary of the Wireless Society of Newcastle) on Wednesday, 11th June, logged K.G.O. in good strength at 6.30 p.m. and then held the station for 1/2 an hour. Mr. E. Jones was present during the latter quarter hour of the reception, and says: "I could hear him quite clearly with only the one head phone."

Music was in great strength considering the distance. The ring of the piano in the siles could be heard distinctly.

Inspired by the success of other amateurs in the State, Mr. Swain determined to add K.G.O. to his log, and succeeded.

The set (home construction) consisted of 3 valves, 1 R.F., D. and 2 L.F.

He is the first Newcastle man to hear the Californian station.

Mr. Allen Cotton, of Wartah, has also logged K.G.O.

This was on Sunday, June 24th. Using 1 R.F. and detector (this set also home made), at 6.55 p.m. the words "K.G.O. California" came in clearly.

Mr. Robinson of Georgetown, was then communicated with and on returning at 6.5, nothing was heard till 6.52, when "K.G.O. St. Francis Habor, San Francisco" was heard by both amateurs using two pairs W.F. 4000 phones in series. Towards 6.55 music was again heard and at 7 p.m. "K.G.O. (times) it is now 11 Pacific time." Nothing further was heard.

In the last quarter hour at times the siles came in quite clearly, and individual instruments could be distinguished.

FROST RADIO APPARATUS IS FEATURED ON PAGES 4 & 5.
The Tuning Panel

By "Insulator."

This is the sequel to this series by "Insulator." covering the description and constructional details of a progressive unit panel receiver. To all those who are contemplating building a really first-class receiver, we strongly recommend modelling their receivers along the lines laid down in these splendid articles—Editor's note.

Following up with the construction of the progressive unit panel receiver, which I started in last week's "Wireless Weekly," I propose to give you the constructional details necessary to make the first panel, that of the tuning unit. Here is a list of the material required for this item—

1. Piece of bakelite, 9 in. x 8 in. x 1/2 in.
2. Three-cell holder.
3. Two series parallel switch.
4. No. 774 43 variable condenser.
5. No. 774 23 variable condenser.
6. Six diodes.
7. Bakelite top terminals.
8. Some No. 16 gauge T.F. wire (for connections).

All the material for this set I obtained from Messrs. Calvillo-Moore, of Rose Street. The Marco S.P. switch fills a long felt want, as much as it saves considerable time in marking and drilling panels, as well as the fact that it is simpler to connect than the standard type of S.P. switch. The 774 condensers also only require a single 3½-in. hole for fixing, and considering the price they are a bargain.

Seeking the most suitable parts for this set, I looked around at a few radio shops, and I noticed the scarcity of 3/20 aerial wire. Let me tell you all that if you can't obtain 5/30 wire, don't get excited or get down in the mouth, and be silly enough to give up completely. Just purchase No. 14 gauge copper wire. It will make quite a good aerial, as it is substantial. Look at the number of telephone wires there are about, and stop wires are either No. 14 or No. 16. Personally, I have experimented with various gauges of wire for the aerial, and for the life of me, on local signals I can't see any difference in results between 7/30 wire and No. 20 gauge stranded wire. If you doubt me try it for yourself, and tell me if you get any different results.

Drillers will be interested in home assembly sets.

Page Sixteen

Wireless Weekly
Friday, July 11, 1924.

DRAEERS WILL BE INTERESTED IN HOME ASSEMBLY SETS.
Wireless Weekly

Wireless Telephony
Conference at Geneva.

Preliminary conference for an International Agreement on Wireless Telephony was held at Geneva on 22nd and 23rd April, and was attended by delegations from 30 wireless telegraphy and telephony companies, stations and administrations in different countries, including those of Australia and New Zealand. The conference was attended by the Minister of Education of the Geneva Republic and was accorded a civic reception in the Palais Eynard, Aulnose, on the second day.
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Hints on Receiving Sets.

By LOUIS FRANK

(Hint from "Radio News")

Are you obtaining the best results possible from your receiving set? If not the reason is more likely due to design than to any fault in the receiver. Mr. Frank covers in this article, written in plain words, several points that everyone can understand.

The builder of receiver construction is greatly on the increase. Far beyond any one of the many millions in regular radio receivers, it is much more difficult and fascinating to build a new circuit, see whether the present receiver cannot properly be modified to give satisfaction. Often a simple standard circuit properly constructed will give almost the same satisfaction as some of these so-called sensitive and complex ones. One might say that "it's all in the way it's built."

**COIL CONSTRUCTION**

Coil construction in the first consideration. A bad coil may completely spoil an otherwise perfect set. The first thing the constructor ought to consider is the coil. It is a fact that people lose sight of the fact that the fine tuning is sometimes going to be poor. The coil is made more efficient and well tuned in signals which, otherwise, would require more sensitive receiving apparatus to detect.

At present the writer of a receiver is after one or both of two things. First, he wants to receive good, husky sound from the receiving coil. Second, he wants to build the coil into a long distance receiver. Instead of discarding the present receiver, which does not satisfactorily give either or both these requisites, and building a new circuit, see whether the present receiver cannot properly be modified to give satisfaction. Often a simple standard circuit properly constructed will give almost the same satisfaction as some of these so-called sensitive and complex ones.

First the loud speaker should be silenced for the real use of this apparatus to be observed in such construction. So much energy is being expended in the devising of novel and unusual circuits, that people lose sight of the fact that

...and the result is a failure to obtain the proper tuning of the receiver. The modern tendency is to use fixed tuning coils and to use the tuning with the variable condenser. The tapped coil is used for the following reasons: The reason for using a coil is to enable a part of it to be used. When a part of the coil only is used, the other part which happens to be the "head coil" increases the resistance of the small part used; it may be hard to believe, but it is a fact. Ten turns of wire all alone give a definite resistance, but the moment we add a few turns to the 10 and again measure the resistance of the original 10 turns, we find the resistance higher. The mere presence of additional turns is sufficient to cause such a resistance rise. This resistance rise, due to the winding on turns, causes a loss of energy called "head end loss," which cuts down local signal strength and prevents long distance work. Again, when a coil is tapped numerous points must be soldered, two for each tap, one at the coil, and one on the switch stud. Every soldered joint introduces the possibility of a bad connection with increased resistance and losses again. Furthermore the switch used in which these coil taps are brought out must be included in some circuit, generally it is the panel. This again causes a rise in the coil losses due to loss that occurs in the insulating material used of the switch used. If these losses are brought out, the tunable coil is getting to have the same if not greater and more sensitive receiving apparatus to detect.

In connection with energy losses which occur in the diaphragm of the receiver, a similar remark holds for the insulating material on which the coil is wound. The presence of insulating material in the electric field of a coil results in loss through it. It is often difficult to make people believe or realize this, because they feel that if the panel or tube is an insulator, no losses can occur in them. This is true enough when we deal with ordinary commercial currents like direct currents or lamp lighting currents. Radio frequency currents, however, are different and they do many things not done by ordinary currents. They cause currents to flow in insulating material of a radio set which increase losses and...
GRID BIAS ON AMPLIFIERS.

One of the most frequent mistakes in the construction of sets (unfortunately even some commercial sets have it) is the omission of a grid bias or "U" battery on the amplifier tube. Amplifier tubes generally are worked with over 90 volts on the plate. When a tube is worked with more than 50 volts on the plate, it should have connected in the grid circuit a negative potential. This is important for three reasons. First, it prevents grid currents from flowing and thus decreases the losses which otherwise occur. In the second place, by using a suitable negative potential on the grid, the tube is worked on the straight portion of its characteristic curve, which results in maximum amplification. Without this suitable bias less than maximum amplification is secured. In the third place, and perhaps the most important as far as broadcast reception goes, the grid bias helps to secure best quality of speech and music. Without a grid bias we have grid currents which result in distorting the received speech and music. If most of the available commercial sets which give poor quality speech and music are examined, it will be found that nine times out of ten there is no grid bias battery. This is a fundamental principle of amplifier construction which all
Announcement!

E. R. CULLEN, the well-known Electric Supply Store has opened an up-to-date Radio Department. A large shipment of all the best known Radio Parts has just arrived, also large stocks of all makes of Crystal and Valve Sets. Call and Inspect.

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Write or call for illustrated literature, price lists, etc.

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Mr. Wing's extensive wireless experience and knowledge of Australian conditions, coupled with a pleasant personality and the possession of that indefinable quality called tact, combine to make him an excellent sales manager, while his desire to serve all interests have made him many friends both in the trade and in the "Home."

QUESTIONS AND ANSWERS

J.R.S. (Lindfield) : Not while you continue to use it as a crystal receiver.

Books on Wireless

History and Operation of the Parang Tubs, by J. Mainse. Price 1½ post free.


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Broadcast Receiving Sets and License Forms

Together with the FREE SERVICE of Broadcasters (Sydney) Limited may be obtained from the following:

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229 Castlereagh St., Sydney.
Telephone: City 358.

United Distributing Coys. (N.S.W.) Ltd.
(Wholesalers)
28 Clarence Street, Sydney.
Telephone: City 3566.

W. Harry Wiles
69-62 Goulburn Street Sydney.
Telephone: City 3569
1 door from Pitt St.

Wireless Supplies Ltd.
21 Royal Arcade, Sydney.
Telephone: M 3578.

E. R. Cullen
96 Bathurst Street
Telephones: City 859, 2596.

Radio House
619 George Street Sydney
Telephone: City 1487.

Colville Moore Wireless Supplies:
10 Rowe Street Sydney.
Telephone: B3261.

Ramsay, Sharp & Co. Ltd.
217 George Street, Sydney.
Telephone: City 3176.

The Home Electric
10A King Street, Sydney.
Telephone: B 3565.

Swains Ltd.
113-123 Pitt Street, Sydney.
The meeting held on Saturday last, being the first on the new syllabus, was a decided success, and it is hoped that every meeting will prove as successful.

The meeting closed at 10 p.m., adjourned for the annual coupon of Caydon Radio Club, quarter ending 27/9/24.

1st week—Question Night.
2nd week—Testing transformers.
3rd week—Social.
4th week—Lecture.
5th week—Special.
6th week—Lecture.
7th week—Invitation to club.
8th week—Home-made apparatus.
9th week—Lectures.
10th week—Lecture.
11th week—Questions night.
12th week—Debate.
13th week—Circuit night.

All intending members are respectfully invited to communicate with the Hon. Secretary, Mr. G. M. Cattie, "Carwell," Highberry St., Croydon.

This meeting has been arranged to give the beginners a chance to learn, but if they have not learned anything by the next meeting, we would suggest that they should be sent to some other club.

The meeting was held on Tuesday evening, and the attendance was very good, and generally the case at the junior meetings.

These meetings are especially arranged to help the beginners, and we would suggest that they should be sent to some other club.

Mr. E. J. Powell of Albert Road, Strathfield, who has placed at the disposal of the club his fine large room for a club room, has been in touch with the club and has offered to supply any information required.

CROYDON RADIO CLUB.

The usual weekly meeting of the Croydon Radio Club was held at the Club Rooms, "Rockleigh," Long St., Croydon, on Tuesday, June 20th, at 7.30 p.m., when all business in hand was rapidly discussed and attended to.

Mr. W. S. Lees, present his balance sheet for the past year, which was accepted.

The result of the Question Night Competition fell to Messrs. Craig and Jacknek, who received the Belden prize of 1/6 each.

STRATHFIELD AND DISTRICT RADIO CLUB.

The 13th general meeting of the club was held at the secretary’s residence, on Tuesday, 1st July, Mr. I. E. Penrose being in the chair. The meeting was held on a Tuesday on this occasion, and account of the club’s change from a once-a-month meeting to a once-a-week meeting.

The club has pleasure in stating that it has secured a club room (where meetings, lectures, etc., will in future take place), owing to the generosity of Mr. E. J. Powell, of Albert Road, Strathfield, who has placed at the disposal of the club his fine large room for a club room. This together with lathe, drilling machine and all necessary tools, a reference library, etc., at last puts Strathfield Club on a very sound footing. The serial, which is in course of construction, will be supported by 80th. masts. The type selected and all particulars of the club’s set will be notified later. One feature of this offer is that Mr. Powell has given the use of the club room, together with the use of a special wireless room, which is now being fitted up absolutely free of any expense, and on this account the club cannot thank Mr. Powell enough. The headquarters of the club are now situated at the corner of Albert Road and Lake Street, Strathfield, where all experimenters will be welcomed any Thursday night. Or communicate with the secretary, Mr. M. Wixall, "Almon," Long Street, Strathfield.

WIRELESS INSTITUTE, SOUTH AUSTRALIAN DIVISION.

JUNIOR SECTION.

The monthly meeting of the junior section of the South Australian Division of the Wireless Institute was held in the Prime red Hall, Lecture Theatres, Adelaide University, on Tuesday, July 1st.

The attendance was very good, and generally the case at the junior meetings.

The meeting was held on Tuesday evening, and the attendance was very good, and generally the case at the junior meetings.

Mr. Frank Erle occupied the chair, and commended on the poor attendance.

A very interesting lecture on “R-Q” was given by Mr. J. E. Hone, and after the lecture a good deal of discussion took place and contributed to the educational value of the evening’s lecture.
Listen in

Murdoch's Speaking! You know—"Where the Good Hats are"
Speaking about Hats, a new Murdorch Style that has found favour
to a remarkable degree with young men (and those who stay young)
is known as

Murdoch's Popular "Nail Curl" 16/6

A shapely and distinctive Soft Felt exactly as illustration. A pleasing
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Fawn and Beaver. With smart black silk band and
loose side bow. Better than ordinary Guinea Value.

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mention "Wireless Weekly" when
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4000 ohms

Engraved Terminals
Rotary Switches
Stickers, 10s.
Barley Sticks
Broadcasters
Crystals, from
Microtaps, 30 ohm, U.K.X.L.D.
Rheostats, 6 ohm, U.K.X.L.D.
Condensers, Variable, with dial, 0/1
Condensers, Variable, with dial, 0/8
Polarity Reed Indicators
Cunningham Series Parallel Switches
Flachman Variable Leak and Condenser
Flachman Variable Leak Only
Valve Sockets, from
Contact Stubs
"Free Head" Phones, 2200 ohms

The Home Electric
106a King Street
SYDNEY
PHONE B 5655
Correspondence

"Brisbane."
June 26th, 1924.
Editor, Wireless Weekly

Dear Sir,

With reference to letter in Wireless Weekly, June 21st, from Mr. Woollad, saying that in all cases except Mr. Wright of Southport, it has taken at least 4 values to pick up K.C.G., I have picked him up on one value: and for the fifth time last night, and have heard speech, announcements and music in very good clarity. I picked him up for the first time on one value on Easter Monday, and claim to be the first Australian experimenter to do so. I have only my 12 year old son as witness, but am willing to perform the same feat before any witness.

Yours faithfully,

H. GOTTING.

18 Atrington St., Fine Dock.

The Editor, "Wireless Weekly."

Dear Sir,—With reference to the Wireless Exhibition in October last year. On that occasion a number of prizes were allotted for amateur exhibits, and I was fortunate enough to be among the prize-winners. About December the prizes were presented at the Wireless Institute rooms at the Royal Society Building, when it was announced by Mr. Rendell that a handsome certificate would be forwarded to each prize-winner. It is now over six months since that announcement was made, but up to the time of writing nothing has been forthcoming. On two occasions I interviewed Mr. Rendell (Secretary of the Institute), Mr. Basil Cooke (Vice-President) being present at the first interview. Both these gentlemen assured me then that the certificates would reach me in one week. The explanation offered me on my second visit to Mr. Rendell was "pressure of business," but the certificate would be forwarded at a later date. That is three months ago, and still nothing doing.

Yours faithfully,

N. L. MCKENZIE.

Distributed by Welly Radio Co.,
13 Royal Arcade, SYDNEY

Perpetual Radio Handbook 25/-

The wireless weekly : the hundred per cent Australian radio journal
My first ship! The wonderful feeling I had as my feet tred the gangway of the Blue Funnel liner, "Ulysses," can only be realized by those who, like myself, have spent long days of study at the Marconi School in Sydney, and after many false alarms and anxious moments, have at last been given the fateful letter to the captain of the ship.

I was one of a bunch of alive (very alive) young lads, who were rushed through an intensive course of training to keep readiness in time of war, late in 1914. Considering the limited time at the disposal of the instructors (Mr. G. Apsey, now technical superintendent of Amalgamated Wireless, was then school manager), the amount of knowledge that was coaxed, kicked and sometimes forced into our thick domes, was positively amazing. In those days the stock equipment was a Marconi K.W. set and a Telefonsen spark coil and turner, and on this stuff we were daily drilled in the learning of starting up, stopping, adjusting the crystal, etc. On the black-boards, after much patience, the meaning of cross crosses and queer dots gradually became fairly clear to us, and when, early in December, we were all shipped hurriedly to Melbourne by the "Kanoomba," not one of us but considered himself on fraternal terms with Guglielmo himself. I can easily recall the bewildered look on the face of the captain of the "Kanoomba" when he stepped jauntily into the music room and found half-a-dozen "wops" gathered round a key and buzzer, reading the code while the saloon passengers looked on in wonder. The captain delivered himself of one of the finest and most effective impromptu speeches of a long and useful career, and his meaning being clear and unmistakable, we, to use his own term, "napped" it.

The fact that I was signed on as third Marconi operator of the "Ulysses" did not reduce my chest expansion one single inch, and as my gaze took in the broad sweep of spatted deck, the tall funnel and the aerial swinging high up aloft, I felt that my life's greatest ambition had been fulfilled.

The senior operator was a small Scotsman, with a lip and a leaning toward that dry brand of Scots' humour which always leaves you wondering why the heck they call Scotsmen wiry.

Personally, after a long acquaintance with Scotsmen at sea, I find their peculiar accent still grates on my tender nerves, and their humour leaves me cold. However, Tommy (everybody called him Tommy, although his front name was Angus) proved quite a decent little fellow, and we got along fine together. I occupied the lower berth in his state room, and right excellent company I found him when he used to squat on the edge of his bunk and squinting down at me.

Weeks we were together many things happened which threw Tommy and myself off our beard a bit, Tim never diverged from his attitude of calm detachment.

He was a pure mixture of efficiency and eloquence. There was a permanently unshaven look about him, and his facial expression department was ever carrying dignity for the cause of the starboard. In his hour of watch he would sit for long periods practicing scales on a flute, to the immense delight of an engineer in the cabin next door, who used to thump violently on the Bulk head— but to no effect. Tim had a

The Marconi School.

The wireless weekly : the hundred per cent Australian radio journal
the wireless weekly : the hundred per cent Australian radio journal

Friday, July 14, 1924.

WIRELESS WEEKLY

Page Thirty-one

the wireless weekly : the hundred per cent Australian radio journal

F.T.S. "Ulysses."

DAVID JONES' SALE

SENSATIONAL REDUCTIONS IN RADIO EQUIPMENT

The astounding price reducing extends to the Radio Department at David Jones'. All purchases of Radio Goods are subject to a discount of 2/- in the £ for cash, except a few proprietary lines which carry no concessions whatever. Here are some amazing Sale Offers:

- Type C. Baldwin Phones, Usually £1/17/6; Sale Price £3/17/6
- Porcelain Valve Sockets, Usually 4/6; Sale Price . . . 3/-
- Glass enclosed Crystal Detectors, Usually 14/6; Sale Price, 11/6.
- Type C. Unit for Loud Speaker work, Usually 40/-; Sale Price, 36/-.

Cunningham Valves, Nos. 391A and 299, in stock at standard price, each . . . 35/-.

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**I got it at --**

**SMITH’S**

**NEW RADIO STORE**

**VARIABLE CONDENSERS.**

<table>
<thead>
<tr>
<th>Type</th>
<th>Price</th>
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<tbody>
<tr>
<td>13 Plate, plain</td>
<td>18/6</td>
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<tr>
<td>23 Plate, plain</td>
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<td>11 Plate, plain</td>
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<tr>
<td>12 Plate, Vernier</td>
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<td>22 Plate, Vernier</td>
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**COIL MOUNTS.**

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<tr>
<td>Polar, 3 coil</td>
<td>30/-</td>
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<tr>
<td>United, 3 coil</td>
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**COILS.**

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<tr>
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<tbody>
<tr>
<td>United, from</td>
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<tr>
<td>Gablein Rumlir, from</td>
<td>4/6</td>
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<tr>
<td>Atlas, from</td>
<td>7.6</td>
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**TRANSFORMERS.**

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<tr>
<td>Jefferson Star</td>
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<tr>
<td>Jefferson 41</td>
<td>32/6</td>
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<tr>
<td>Marle ½</td>
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**LOOSE COUPLER PARTS.**

<table>
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<tbody>
<tr>
<td>Complete, from</td>
<td>19/6</td>
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</tbody>
</table>

Bakelite cut and drilled to order.

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Or for a small fee we will assemble your apparatus, guaranteeing the results.

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
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<tr>
<td>Bakelite (for panels), per sq inch</td>
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<tr>
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<tr>
<td>Gingham Renter Cells</td>
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</tr>
<tr>
<td>Atlas Cells from</td>
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<tr>
<td>Insulators</td>
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</tr>
<tr>
<td>Valve Sockets, English</td>
<td>2</td>
</tr>
<tr>
<td>American</td>
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<td>Telephones</td>
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<tr>
<td>Transformers, Jefferson, 41</td>
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<tr>
<td>Star</td>
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<tr>
<td>Marle</td>
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<tr>
<td>United</td>
<td>1.10</td>
</tr>
<tr>
<td>Airway (large)</td>
<td>1.19</td>
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<tr>
<td>Contact Stubs, with nuts</td>
<td>1</td>
</tr>
<tr>
<td>Extra Nuts, doz.</td>
<td>4</td>
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<tr>
<td>Battery Chips</td>
<td>6</td>
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<tr>
<td>Terminals</td>
<td>4</td>
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<tr>
<td>Ebonite Slide</td>
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<tr>
<td>Valves, WD11</td>
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<td>WD12</td>
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<tr>
<td>UV20</td>
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<tr>
<td>UV201A</td>
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<tr>
<td>UV 199</td>
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<tr>
<td>Dry Cells</td>
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<td>Accumulators</td>
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</tr>
<tr>
<td>Condensers, Variable</td>
<td>15.0</td>
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</table>

PRICE LIST ON APPLICATION.

RADIO CO., LIMITED
15 Loftus Street, Circular Quay, Sydney
ed in neat white drill uniforms, with black and gold epaulettes, and looking remarkably cool. Fortunately I had a light grey suit along with me, and a pair of cream trousers which had seen long service at home. Something of a problem confronted me as to the landing of these, until by request to the barman I offered a working arrangement with the Chinaman in charge of the laundry. At the mystic hour of midnight, clad in loosely striped pyjamas, I used to sneak along the silent corridors, cream trousers under my arm, and, entering a small space of open deck, deposit them just within the door of the laundry. At exactly five minutes to eight a.m., a parcel would be handed to me by a steward, and at 8 a.m. I stopped out on deck apron and demountable, clad in grey coat and spatter dress trousers. How the Chinaman worked the crate must ever remain a mystery, but every time we pressed each other in the alley way, he would grin profoundly at me as though we had in common some secret which it was not given to other mortals to share.

Tim met the peculiar conditions caused by the change of temperature, in characteristic manner, and with an easy breeziness typical of all his actions. He just went on wearing the same old drab and thus the problem was solved. His appearance on deck, clad in a Fox scarf and half-mended boots while the mercury was crossing the top of the glass, was a source of continual admiration to the military officers next to their khaki drill, but Tim was in a moment of contemplation.

During the midnight to four a.m. watch, pyjamas covered my birthday suit, and those I found not only cool, but convenient. I simply turned out of bed and donned the 'phones. At the completion of the watch I went back to bed, thus avoiding the formality of dressing and undressing. On several occasions Colonel (now General) Munro, who was O.C. Troops, dropped in, and we discussed the wonders of wireless. As far as I can remember, the Colonel was always the only soul on the ship who regarded the war from other than the standpoint of a point, and many of his prophecies made in the Maroni cabin at 2 a.m. on those tropical nights came true.

To be continued next week.

Published by A. W. Watt, "Strathbrae," East Crescent St., McMahons Point, for the proprietors and printers, Publicity Press Ltd., 33/51 Regent St., Sydney.
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Sterling Lightweight HEAD TELEPHONES which give perfect results, are of highest finish, handsome appearance, and fitted with Duralumin head-bands. Resistance 4000 ohms, 44s.

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Sterling BABY LOUD SPEAKER, flawless in reproduction, distortionless and wonderfully loud for its size.

Height 19in. Diameter of flare 10½ in.
Diameter of base 5½ in.

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