Simple Arithmetic

$100 Investment in
The Commonwealth 5% Loan
1928

You pay a deposit of £18
And an instalment of £80
£98

You receive back in 1928 a full £100
And in five years interest
amounging to = £25 2s 6d
£125 2s 6d

Profit on £98 invested £27 2s 6d
This is Interest at 5 3/4%.

It is a good Investment
**Experimental Music Continues.**

No doubt many radio men smiled when they read the Sunday papers. What an amazing perversion of facts — DO THE TRADERS WANT EXPERIMENTAL MUSIC TO CONTINUE?

Wireless Weekly, who we emphatically state, is in the unique position of having the real wireless traders' confidence, has no hesitation in saying "THE TRADER DOES WISH THE EXPERIMENTAL TRANSMISSION OF WIRELESS MUSIC TO CONTINUE"

A Sunday weekly says that its continuance is likely to discourage real broadcasting. Perhaps that accounts for the large Broadcasting Company just formed which intends operating a big station within the next few weeks.

The Postmaster-General, through the medium of Mr. J. Malone, Chief Manager of Telegraphs and Wireless, says: "Experimental transmission of music shall continue for the present," and knowing that due consideration was given before this statement was made, we have every confidence in telling our readers to LISTEN IN.

---

**Roster for Week ending 29th August, 1923**

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Transmitters</th>
</tr>
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<tr>
<td>Sunday, 26</td>
<td>7.30 to 7.45</td>
<td>2 GR</td>
</tr>
<tr>
<td>Monday, 27</td>
<td>7.45 to 8.00</td>
<td>2 GM</td>
</tr>
<tr>
<td>Tuesday, 28</td>
<td>8.00 to 8.30</td>
<td>2 ZG</td>
</tr>
<tr>
<td>Wednesday, 29</td>
<td>8.30 to 9.00</td>
<td>2 ZG</td>
</tr>
<tr>
<td>Thursday, 30</td>
<td>9.00 to 9.30</td>
<td>2 ZG</td>
</tr>
<tr>
<td>Friday, 31</td>
<td>9.30 to 10.00</td>
<td>2 ZG</td>
</tr>
</tbody>
</table>

Vacant times may be booked by Transmitters by ringing Red. 732 between 9 a.m. and 5.30 p.m. daily.
The Mailed Fist, No. 4.

The Poor Experimenter to Suffer Next.

Another astounding document has been placed before us. The experimenter is asked to pay 5% for the right to experiment.

Before you start to experiment, you pay 10/- for a license from the Government; now before you start to build your set you are expected to pay another 5%. It is what we gather from this amazing document to which is attached the name of Amalgamated Wireless (Australia) Ltd.

It looks very much like a monopoly to us.

Telephone Receivers.

By E. Joseph.

The author has been constrained to write this article owing to the action of a radio operator who made certain alterations of which some came to his telephone.

One form of radio receivers of resistance from 120 ohms up to 600, and the same as generally are of the fact that he obtains better results with the phone of high resistance. To begin with, resistors in resistance is of no use or advantage at all, but if low, under certain circumstances by a direct resistance.

The telephone circuit of a radio receiver consists usually of a crystal, a resonant circuit (resonant to radio frequency) and sometimes of a source of electro-motive force. The crystal may be replaced by the plate filament circuit of a tube of three subside valves, the resonant circuit may then be sometimes eliminated. Occasionally the telephone circuit consists only of the secondary winding of a transformer.

The value of the fluctuating electro-motive force available to work the telephone receiver depends upon the strength of signals received, the proportioning of the resonant circuits, the damping, and certain adjustments controlled by the operator.

Whatever its value, it is called to read a current through the telephone circuit. This current obeys a law which is correct for fluctuating and alternating currents as it is for direct and radio-active currents.

The value of the current is therefore given by

\[ I = \frac{E}{R} \]

where \( I \) is the current, \( E \) the sum of all the electro-motive forces in the circuit, having regard to direction also (or the algebraic sum), and \( R \) is the resistance of the circuit.

The resistance of a crystal runs into many thousands of ohms, that of the plate filament circuit of a triode, may be anything between about 2000 ohms and 20000 ohms, and we will neglect for the present the circuit containing a telephone transformer except to state that all references to a telephone receiver where a transformer is not used, apply equally to the primary of the transformer, where one is used. We will take 3000 ohms as a representative figure for the resistance of the deriving device, will assume that a certain electro-motive force \( E \) is available and will state the variation in current with receivers of different resistances taking 100 and 20000 ohms as examples, the value of \( E \) being taken as 1. Table 1 shows us the effects.

<table>
<thead>
<tr>
<th>Resistance of crystal (ohms)</th>
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<tr>
<td>Resistance of telephone</td>
<td>500</td>
<td>5000</td>
</tr>
<tr>
<td>Total resistance</td>
<td>600</td>
<td>6000</td>
</tr>
<tr>
<td>Answer valve ( E )</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Telephone current</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Ratio of amplifier</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Rate of Resonance of telephone</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2.

We see that increasing the resistance of the telephone receives one hundredfold has only decreased the current about 16 per cent. This is apparently a slight disadvantage. What then is the use of high resistance phones?
Using the “Inverse Duplex” with Various Kinds of Tubes.

By David H. Grimes.

Briefly, the inverse duplex is a method of employing tubes for work simultaneously, without overloading them—the heaviest audio-frequency currents flowing in the tube where the weakest radio-frequency current is flowing.

Most of the troubles encountered in the operation of the inverse duplex arise from the radio-frequency part of the circuit. If you have had little or no experience with radio-frequency circuits, the following suggestions will prove helpful to you. All leads from the radio transformers to the grids, plates and by-passing condensers should be as short as it is possible to make them. These wires are carrying high frequency alternating currents, and if run near other wires or apparatus they are likely to “cross over” into them through the capacity between

The layout for the audio-frequency part of the inverse dupplex.

them, just as they do between the plates of a condenser. This will cause no end of trouble. The photograph showing the equipment layout indicates the closeness of the radio transformers and tubes.

Next, radio frequency amplification unless properly designed, has a tendency to oscillate or howl, and to the novice with little experience, it is almost impossible to stop it. This is mostly a problem of radio transformer construction, but even with a given transformer which

design suitable for operation with each other.

BEGIN AT THE BEGINNING.

The best possible way to proceed in wiring an inverse duplex circuit is to connect up merely the two stages of radio and a detector to start with. If no results are obtained on this, it is useless to expect anything by adding the two stages of audio. The audio stages function to make louder the results already obtained by the detector tube. Hence it is absolutely necessary to secure results there before proceeding further.

One of the features of the inverse duplex circuit is the easy and ready way in which trouble may be isolated. The hook-up can be cut into three separate and distinct circuits—the radio, detector, and audio connections. Any one of these three may not be operating properly due to troubles common to radio circuits, detector circuits, or audio circuits.

For instance, on hop reception, it is somewhat difficult to make a so-called “crude” tube, such as the UV-201, act properly as a detector on only two stages of radio. On the other hand, a “soft” tube, such as the UV-200, will do this easily. These are detectors and detectors, varying over all known range of sensitivity. A great deal will depend, naturally, on the sensitivity of your detector for best results. A recent article recommended a UV-200 tube as a detector. This tube does not require a grid condenser or leak and the grid wire should be held out of the filament. A UV-201 or 201-A tube is not recommended here for a detector.

Using Dry Cell Tubes.

This brings up the dry-cell situation as applying to my circuit. The same thing holds true in this case. When satisfactory radio amplification is obtained and successful detection is secured, the rest is easy. The new UV-201-A tubes which will operate on low enough currents to permit their use with dry cells, cause considerable difficulty in radio circuits unless special precautions are taken. I have found that the easiest way to secure stability with these tubes on radio frequency is to drop the plate voltage in 5 volts and sometimes even lower. Dropping the filament voltage below 5 volts often helps.

For a detector tube on dry cell operation, the UV-201-A can be recommended because of the high...
Slamant current required. It is possible to use it, but several banks of dry cells must be connected in parallel to hold up for any length of time. The expense of such operation has been greater than the maintenance of storage batteries, and is not advisable. The UV 200-A tubes are used in series, as if they have, they have learned how to overcome them, by reversing primary windings. The reversing of leads on the primary of the radio transformer, by the way, is a good thing to try when troubled with instability in the radio frequency circuit.

**FIG. 1. HOW TO EMPLOY A UV-200 AND TWO 284-A'S.**

Modern receivers are used for the 284-A's, and the common 1 to 100 rheostat controls the UV-200. Dry cells in series parallel are used to light the filaments.

This will give a circuit what was said in a recent issue about overcoming the tubes in certain types of "tubes" circuit. It was also brought out that the inverse tubes greatly helped in overcoming this trouble by balancing the load. Even then, if the incoming energy is excessive, as is the case on normal reception for local work, the carrying limit of the tubes is reached, and poor quality results. In this case, the 400-ohm resistance would not be sufficient to cut the energy down to a reasonable amount. WD-11 tubes are not very satisfactory as amplifiers in this circuit, as they are limited in energy and are easily overloaded. This circuit is essentially a super-sensitive layout and will not stand transconductance currents. If loud reception is desired on local or long distance stations than that given by two stages of radio, it is suggested that an additional tube of straight audio be added between the set and the reproducer. The sole purpose of this tube will be audio amplification, and can be used to the limit of its ability for that purpose.

Greater range is desired, a straight radio stage may be connected between the loop and the first amplifier tube, but, of course, this has a tendency to overload the loop tube and may render the receiver quite useless. Raising three extra tubes beside the detector is not to be recommended to the uninitiated, although it has worked out perfectly well in hundreds of cases during the past year. Until the amateur has fully familiarized himself with the dual-polarity on two amplifier tubes, he should not tackle the three amplifier layout.

**ANY LOOP WELL DO.**

A one-foot loop was referred to in a previous article, and this has led to much confusion. Many readers inferred that the circuit would operate with nothing else. Any kind of a loop will work on the circuit, provided the number of turns are such as to tune properly with the variable condenser for the wave lengths desired. The smaller the loop, the less energy it will pick up, and the less will be the range for a given sensitivity of circuit. Many other types of sets have operated over considerable ranges with loops ranging all the way up to five feet on a side, or even larger. The one-foot loop was emphasized merely to illustrate the extreme sensitivity of

**FIG. 2. THE SAME CIRCUIT ADAPTED FOR USE WITH A WD-11 AND WD-12.**

Note the one and a half volt tap-off for detector-tube filaments.
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<td>Variscope, Mounted</td>
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VACUUM TUBES

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<td>Radiotron Detectors, U.V.200</td>
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<td>Radiotron Amplifiers, U.V. 210A</td>
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<td>Cauvinham Detectors, 2500</td>
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<td>Espanse, &quot;B&quot;</td>
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</tr>
<tr>
<td>De Forest, P.V. AA, (3 volts)</td>
<td>45.0</td>
</tr>
</tbody>
</table>

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the circuits. On powerful stations up to 150 miles away, I have obtained good reception on a 4-inch coil—the secondary of a variable. For best all-round results, a 10 to 20-inch loop with 8 to 12 turns of wire, spaced a quarter of an inch apart, is suggested. On a three-foot loop, a listener in New York, using the Inverse Duplex circuit with two tubes and a crystal detector, has picked up stations as far west as Kansas, at noon. This size loop has a tendency to overload the circuit on strong reception. Overloading is easily detected by poor quality, or the first or second amplifying tube acting as a detector instead of the regular detector tube.

TWO WAYS OF OVERCOMING NOISE.

After all, the above suggestions, if followed, there will be cases, no doubt, where the fan will still have trouble. There are so many variables which can cause trouble. I would recommend trying two additional changes which ordinarily are not desirable. The first is to run the grids of both amplifying tubes back in potentiometers instead of to the negative filament, and the second is to cut down or perhaps eliminate entirely the by-passing condensers on the tubes. This last gives broad tuning, and also reduces the noise, while the second materially reduces the range.

The audio transformers should be of the 20 or 4 to 1 ratio preferably. Under certain conditions especially when using a crystal for a detector, the first audio transformer after the detector can be of the high or 10 to 1 ratio.

It is assumed that the ordinary troubles possible in radio work, such as open transformers, poor tube connections, broken down condensers and run down B batteries, have been located and eliminated. It is naturally beyond the scope of this article to cover all these points, but nevertheless they must first be checked before any cure can be obtained. It’s also true of two troubles which I have personally called to remedy were due to such things as mentioned above.

If I have in any small degree helped the radio fan along, I shall feel amply repaid, and to those who

---

FIG. 3. Showing how to add a stage of straight audio to the inverse duplex. Have not achieved all the results they had a right to expect, I can only suggest that they accept the blame on the back of one of the earlier automobile headlines, after all the ears for possible automobile troubles have been given throughout a vast number of pages, the final statement is made. "Don’t forget that this machine once worked, and with proper care will work again.

NOTE. Owing to an error on the part of our black marker oblivion showing diagram No. 6 is missing from this article, but will be published in our next issue.

---

FIG. 4. The stability of the circuit is improved by use of 200-ohm potentiometers. Note that in this case there is no by-pass condenser on the second tube.

---

Never have the British been more enthusiastic over radio than now.

KRYSTAL FANS ARE BEGINNING TO LISTEN IN.

There are now about 20,000 privately owned radio receiving sets in France—enough to each of the 10,000,000 in the United States.
Low Frequency Power Amplifier Unit.

Intended for use with the tuning detector and high frequency units already described, this power amplifier can well be made up where it is desired to operate a loud speaker from any type of receiver apparatus. The design is based on that adopted in the previous units, and consequently the general dimensions are adaptable for the size of the components to be supported, but if space is a consideration it is easy to build an equally effective instrument using a panel not quite so tall as that shown in the diagrams.

The following components are required for the construction of the unit:

A piece of best quality polished mica 5-1/2 in. in tolerance, and of a size suitable for fitting a panel to 12 1/4 in. by 8 in., and a strip 12 in. by 1/2 in.

Two filter condensers.

Two valve holders.

The arms and contacts of two double-pole two position switches, as used previously.

Eight terminals.

A 21-volt battery, such as is used in a pocket lamp, and also a single cell from such a battery.

Wire and insulating tubing for connecting up, and various brass screws.

A piece of hard wood for a baseboard, which should measure 12 in. by 6 in. by 2 in. Another piece of wood will also be required 11 in. by 6 in. by 1 in., from which end pieces can be made when it is sawn diagonally.

Two intervalve transformers and a telephone transformer, all of reliable make.

With regard to the selection of intervalve transformers, large types will be found the most reliable. A large transformer may be wound with wire of a gauge suitable to pass the required current, and the space provided for the winding allows of the use of angle turns. Small transformers invariably sacrifice one or both of these desirable features. When purchasing, one should ascertain the number of turns with which the transformer is wound. This should be 36,000 or more, and the ratio of the number of primary turns to the number of secondary turns should never exceed 1 to 3 when used with British "B1" type valves.

Should it be the aim of the reader to construct an amplifier for use after a crystal detector, it is the recognised practice to adopt a lower

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rate than this, the reason being that the crystal delivers a much smaller current than a valve, and consequently finer wire may be used and none turned included in a given space. Especially is it desirable that ample turns be included for the purpose of building up the necessary impulse turns from the small current produced by the crystal. A transformer for this purpose should have a ratio of about 1.0 to 1.

In view of the tendency of closed core transformers to operate better on certain notes frequencies than on others, thereby providing distortion, it will be found that in several modern power amplifiers open core transformers are employed, or those in which the core consists only of a bundle of fine wires in the centre of the winding and equal to it in length. Such transformers must not be assembled close together, as the lines of force around one may suit special power amplifying valves such as "L.H.T." and "H.R.T." it is recommended that unless suitable transformers are employed the windings may be destroyed with the latter type of valves.

The switches for cutting out the valves of the amplifiers are of the same type as used in the tuning and high frequency amplifying circuits, but it is not essential to the working of this unit to employ low capacity switches of this type. Should it be desired to key or "Dipower" the switch, a circuit is given showing an amended method of wiring only half of the contacts of each "Dipower" switch.
WIRELESS WEEKLY

August 24, 1923.

A LITTLE BACK CHAT.

A novelty in the way of entertainment was broadcasted from a General Electric station at Schenectady, New York, when part of a speech was given backwards. Two paragraphs of an inspirational address given by Dr. Frank G. Crane were repeated by means of using a Palle-photophone film from the end instead of the beginning. The peculiar effect is better imagined than described. The Pallephotophone records sounds on a strip of celluloid on an ordinary sheet of cinematograph film. Holding it up to the light, one can discern lines running up and down in orderly, and of many different frequencies and amplitudes. Just as in motion picture, amazing results, like houses rebuilding themselves, and men or animals leaping out of holes instead of into them, are obtained by reversing the film, so the speech film reproduced everything backwards.

LET US HELP YOU ENJOY RADIO AT ITS BEST

-----

Bring in Those Distant Stations

---

WIRELESS WEEKLY

---

Radio Co. Ltd., 15 Loftus-st, Sydney
The Filament Resistance.

Although the part which it plays in the theory of operation of a receiver in a linear set, the filament resistance is a component whose efficient performance has much to do with the ease and conveniences of the manipulation of the set.

It is not, as a rule, worth while to make one's own filament resistance, since very good ones can be purchased extremely cheaply. To ensure the purchase of a satisfactory type there are a number of points to be borne in mind: besides inspecting upon the purpose of various desirable electrical and mechanical features, one must remember to see that the resistance is suitable for the particular set to which it will be put. For example, if it is to control the filament supply of a group of, say, three valves, it must be capable of carrying a current of two amperes without overheating, whereas if it is to control one valve only it need not have nearly so large a current-carrying capacity, but it must have a sufficiently higher resistance, to give the required amount of regulation to permit of a single four-valve valve being run from a two-valve accumulator.

The other important points to note in buying a chrostat are chiefly concerned with the maintenance of a steady current, excited on the resistance element during adjustment, since the quickness of otherwise of operation of the chrostat depends upon this feature. The moving contact-arms should press firmly but not too heavily upon the resistance wire, and it must pass smoothly and without chattering over the turns of the winding. A weak point in many resistors is the unsatisfactory nature of the connection to the contact-arms; this connection should be steady and reliable and not of the loose and serrated rub-on which results from the utilisation of the contact between the housing of the spindle and the spindle itself (and hence with the moving arm).

CARL'S VERSUS AERIALS.

In the U.S.A. Navy radio for the captured German submarines was used for the deep-sea work, and there was never much reliance on the Atlantic Coast, besides a number of smaller cases. Patently the chief of them all, receives all the official communications from Europe, which are then sent to Washington over a wire. Every-thing to a few South America countries, messages are never sent via cable, and even these signal radio should a special war be stationed by selecting then.

BOOKS ON WIRELESS

Practical Amateur Wireless Stations by J. White, Price 4/6, posted.
Amateurs' Book of Wireless Cables, by F. Harris, price 3/6, posted.
Crystal Receivers for Broadcast Reception, by P. Harris, price 2/6, posted.

N.S.W. Bookstall Co. Ltd
17 George Street, Sydney
Hints for Amateurs

When you connect up a set from a diagram, you will find it helpful to observe the following procedure:

Start at the antenna binding post and connect it to the instrument as shown in the diagram you are following. When this connection has been completed, draw sure that connection on the diagram with a coloured pencil. You will then know that that connection is complete. Then from the other terminals of the same instrument connect a wire to next instrument as shown on the diagram. Cover this connection on the diagram with a coloured pencil line and do the same thing with every line on the diagram.

When all the connections are drawn in coloured pencil you will know that you have completed hooking up your set and that it has been done correctly. This will eliminate mistakes and make the job simple.

Oscillations are induced in an antenna by passing radio waves only when the antenna circuit is tuned to the frequency of the oscillations which caused the waves to be radiated from the distant transmitting antenna. You have to tune the apparatus that you desire to hear by selecting the knobs that control the capacity or inductance in the antenna circuit of your receiver; before passing waves will cause current to flow through your receiving instrument, thus supplying the necessary electrical energy to cause the telephone to vibrate and reproduce the transmitted signals.

Backfill or formation panels for radio sets, if left with the natural highly polished finish, soon become scratched and ragged. A durable satin finish may be imparted to the panel by rubbing it with sandpaper of medium coarseness—rubbing in one direction until the surface is perfectly smooth and all irregularities have disappeared. A smooth grade of sandpaper should first be used until a dull finish is obtained. This will leave the panel with a greyish tint, but upon applying some furniture oil to the surface and rubbing dry with a soft cloth, a beautiful black colour will appear which will be permanent. Rub the panel of the same instrument only, with a long straight stroke.

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Catalogues, 6d. each; Locating wiring and other diagrams. All makes of Telephones and Valves.

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Complete Crystal Sets, from 27/6; Valve Sets from £3 to £35. 1/; 2/ or 3 valve: Radiotron Valves, 37/6; Venero Rheostats, 12/6; Radioval Knobs and Disk, Polished Bakelite, 4/; Condenser knobs and Dials, 4/4.

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Some Practical Notes on the Flawelling Circuit

The A.T.C. used was 70 turns of No. 14 stranded wire on a former 2-inch in diameter, with a gap of 12 turns of No. 30 B.I. C.C. on a 23-inch former.

The following values of the fixed condensers were used satisfactorily:
- C1 equals 92.5 M.E.
- C2 equals 8.05 M.E.
- C3 equals 9.02 M.E.

The valve which gave best results was a repaired 70A.

After a few hours experimenting the results were brought up to equal what we are able to obtain on a single-valve "super," the handling being much simpler.

The adjustment of the reaction coil is rather critical, and the adjustment of the two resistances R1 and R2 are critical for best results.

The H.T. used was almost 50 volts with an 80W valve. C3 may be omitted with very little corresponding alteration of results, as C1 may be short circuited, but in the case it must be remembered that the H.T. will be leaking through 32 which must therefore be kept high.

The A.T.C. should be kept as low as possible, and therefore a slider or finger tapping switch should be used. The condenser used in the experiments has a maximum of 0.0003 F, and about 60 degrees of this decreases the efficiency quite noticeably.

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THE MOST POWERFUL RADIO STATION AFLOAT.

When the U.S.S. Invincible is put into operation by the United States Shipping Board it will not only be the largest vessel to fly the Yankee flag, but it will carry the most powerful and the most complete radio outfit ever placed on a ship. In addition to its regular telegraph apparatus consisting of a vacuum tube set capable of delivering six times as much power to the antenna as the usual ship outfit and able to maintain communication at a distance of 3,000 miles, it will be equipped with radio telephone and with two emergency sets.

HONEYCOMB COIL DATA.

The accompanying table lists the common sizes of honeycomb coils, by specifying the number of turns of wire in the coil. Such coils are generally made up with an inside diameter of 2 inches, a width of 1 inch, and an outside diameter varying from 31 inches to 41 inches, depending on the number of turns. All of the inductance and capacity values in this table are subject to some variation due to differences in design and construction by various manufacturers. A commercial condenser of maximum capacity of 691 microfarad generally has a minimum capacity close to 0.001 microfarad, hence the wave length values under these two column headings represent approximately the wave length range which may be obtained by this coil and a 0.001 condenser combination in practical. It is better to use a condenser and a wave length higher than the natural one of the coil, as best results can then be obtained, and tuning is possible to other wave lengths.
Another high award in science goes to an inventor of radio apparatus.

The Franklin Institute of Philadelphia has awarded the Elliott Crown Medal to Dr. Leo De Forest for his invention of the audion or three element vacuum tube. The committee report on which the award was based, characterized the invention of the audion tube as "one of the most important ever made in the field of electrical transmission of intelligence."

Who will be the bell?

A blind man in South Dakota was a tching appeal to the U.S. Department of Commerse for a receiving set, on which he had been given to understand that some free ones were available for these afflicted like himself. He had, of course, been misinformed, but the government authorities considered the matter, and are doing all they can to get private parties interested in starting a fund for this purpose. We pass along the very creditable suggestion for your consideration. Blind folk are so much cut off from much that makes life pleasant, and a radio set can and does create the illusion of their own surroundings. Radio listeners might spend some of their time at meetings in constructing inexpensive sets, for this is shared pleasure.

Broadcasting from Zioe.

In Illinois dwells one Volmer, who has proved to his own satisfaction that the world is not round but flat. Nothing to everybody in this, he will expand his theories on this subject and others, such as fixed stars, etc., from the new plant erected on a hill near Zioe, Illinois. Two steel towers have been built there serving as antennas towers, and are two hundred and thirty feet above the level of Lake Erie. Just below the antennas a compact building contains receiving room, generating room, operating room, and studio. The installation broadcasts on a 1000 meter wave length, and already licensed stations in and against Volmer have taken place.

Wireless Weekly

August 24, 1925

Victorian Notes.

By our Special Correspondent

There are experiments being conducted by the great general meeting of the St. Kilda Section, and of the attendance improves at the present rate, Mr. Kellogg will read among the subscribers.

The President (Mr. H. A. Hall), who has been using Bell's Amplification for three years or more delivered a lecture on this subject, giving many circuits and demonstrating the ease of use of same. Mr. Hall described a three-wire receiver employing the German circuit and many other refinements resulting from practical work. After completing adjustments of a Swansea loop receiver (assembled for the occasion by Messrs. Hume, Hum and Hall), Mr. Hall left for his own station (B.B.) and Mr. Short gave a lecture on the construction on a short wave crystal receiver, utilizing a spark with variable capacity. As soon as his apparatus was completed the loop set was switched on and with the aid of Magneto it produced some general listener transmitted by Mr. Hall were loudly received. Despite the fact that only a small loop was used, the signals were audible over hundreds of yards along the street outside. This loop set, when being tested out on the previous evening, failed to work and made from Yall to试验 stations.

Mr. Hall then delivered a lecture on the method and demonstrated the use of all the types of circuits that are to be used. At the close of the meeting these present were merrily to the belief that there had been an exceedingly interesting and instructive evening.

The bedrooms were brightly illuminated by a dozen in all of which the beds were placed, and part of the material for the audience had been made in the work-shirts.

The equipment for the exchange of a three-wire receiving set, complete, as part payment for a Rehoboth Motor Bib and Shepherd. Demonstration of set can be given at any time.

Smart TAAD required for city wireless shop. Must be a keen experimentalist, and just left school preferred. Good opportunity the right hand. Apply "Wireless Weekly."

For Sale - Three Volmer Wireless Receiving Set. Apply Box 2224, C.P.O., or City 2146.

Radio in the Home of the Victorians.

One of the last parts of the world to remain in primitive isolation will be connected to civilization when a radio station is set up which will enable the Turks and Cabobo Is of N.S.W., chiefly known as the ancient hands of the Chinese, to communicate with the other islands of the West Indies.
Apparatus. — Isolated apparatus was thought best. If apparatus is in yard form, the speed of experimenters is greatly hampered, but if a test table is used with different units on it and a row of terminals — Earth and Aerial along top and bottom, H.T. and L.T. on each side with zone 22-alk covered wire to make connections speedily, experimenting is facilitated.

Crydon Radio Club.

Report of Meeting held on Saturday, the 12th August, at the Club Rooms, "Brockleigh," Long Street, Crydon.

A discussion took place on the new regulations and their bearing on experimenters.

Mr. C. Lockwood gave an interesting account of what took place at the meeting held at the Royal Society's Rooms, where Mr. Malcom addressed the Club officials.

Members had their usual dainty tea, and after Mr. Malcolm Perry gave a very interesting talk on general wireless, the most interesting of which was his subject — "Aims of Research for the Experimenters." The chief points on which Mr. Perry gave hints were: the aerial — different types and their various advantages.

MARRICKVILLE AND DISTRICT RADIO CLUB.

The above club met in their Club Rooms at the School of Arts, Howarra Road, Marrickville, on Monday, 13th inst., at 8 p.m., President Hamilton occupying the chair.

The business of the evening was quickly disposed of and the chairman called on Mr. F. doubt Cooke to deliver his lecture on "Romance." Mr. Cooke, on taking the floor, expressed his pleasure in meeting the members of this club to which he had taken an interest since it was

To bring in Good Music and Speech

You require a Variable Condenser in your Set.

It is no trouble to make one with our Complete Set of Parts.

PRICES

(Ready to Assemble)

3 Plate Set—600p M.F. 10/-

1 Plate Set—600p M.F. 6/-

25 Plate Set—600p M.F. 15/6

35 Plate Set—600p M.F. 18/6

Guaranteed DIAL and KNOB to fit any CONDENSERS.

THE QUALITY RADIO HOUSE

618 George Street, Sydney.

If you would rather have the Condenser Re-made we can SUPPLY ANY SIZE AT GOOD PRICES.

Send Stamp for our New Price List.

Send Stamp for our New Price List.

The wireless weekly : the hundred per cent Australian radio journal
A hearty vote of thanks was tendered the lecturer for his attendance and the able lecture. A discussion on the subject followed and Mr. Wallace Brown made an excellent presentation on "Inductance and Capacitance".

The following Monday, 20th last, the Chairman closed the meeting.

THE FIRST AUTHENTIC SIGNALS FROM AMERICA.

Confirmation is given in the following letter of signals received by 2UL, Strathfield, on April 24, 1923.

C. H. Macdonald,
930 Brisbane St.,
Sydney, Australia.

... Many thanks for your letter on my signals... Please excuse my delay in writing you. I have been very busy with my set... The transmitter used when you heard me was a new tube 50 watt set with 1,000 volts rectified and the plate employing a modified Hartley circuit. The aerial is a 1/4 wavelength 20 feet long and 80 feet high. The ground system is a 1/4 wire fins top 1/4" type counterpoise ground 15 feet high and 75 feet long. The nearest contact of this station is 7,500 miles away... Your report corresponds exactly to my log... I believe you should subscribe to two amateur magazines such as "Radio" and "QST"... These magazines are always glad to get a report like yours...
Before disposing of the evening, a vote of thanks was accorded the officers of the Company for their hospitality to members, and Mr. G. Appleby, in replying, stressed the point that his company was, at all times, anxious to assist genuine experimenters in every way possible, a sentiment which was applauded by all present.

On Thursday, August 5th, the Society will conduct a demonstration in conjunction with the Randwick Lodge, which body is holding a benefit performance at the Annandale Theatre, in aid of one of its members. A successful evening is anticipated.

At the meeting to be held at the Club-room, 178 Johnston St., Annandale, on Tuesday, September 11th an illustrated lecture will be delivered by Mr. G. Appleby. The meeting to be held on September 4th will be a business one.

Inquiries relative to the activities of the Society are welcomed, and should be addressed to the Hon. Secretary, Mr. W. J. Zed, 155 Booth St., Annandale.

NEW RADIO CLUB AT LINDFIELD.

On Wednesday evening, August 26th, seven experimenters of Lindfield wire brought together and a club known as the Lindfield Radio Club was formed.

Preliminary business only was dealt with but about 20 members were enrolled and in order to familiarise the new members with the club's constitution another meeting will be held next Wednesday, 29th inst., at 7.30 p.m. at "Beacon," Waverley Rd., Lindfield. All experimenters are specially invited to attend.

Communications relative to the club should be addressed to the Hon. Sec., Lindfield Radio Club, at the above address.

Mr. A. J. M. Guirral was elected chairman, and Mr. R. A. Pierson, treasurer.

NEW USE FOR TOWLING VALVES.

RECEIVING NEW ZEALAND C.W. WITH SET NOT OSCILLATING.

Owing to the loss of some of the receiving valves, Mr. V. A. Gorman was unable to receive the New Zealand Test Signals a few nights ago.

By using towing valves as a separate crystal set, he managed to receive the whole of the C.W. from 3 A.C. Christchurch Radio Society, New Zealand, his own set not being in a state of oscillation.

REGENERATION.

Hear the little sickly bird,
Crowing for its mate,
With its variety
Whistling in its plate.

How I love the sickly bird
And its plaintive lay,
For it says my neighbour is
Hunting for a wave.

Heatings far away, bulks,
Silvering local stuff,
For the best at home here,
Isn't good enough.

So the little sickly bird,
Is calling for its mate,
With its variability
Whistling in its plate.

ILLAWARRA RADIO CLUB.

At the 28th meeting of the Club held on 21st July, in the absence of a lecture, the members indulged in some keen and lively discussion on club matters generally, particularly concerning future policy and meetings. It was thought that in order to make the general meetings more interesting and appealing, business matters at general meetings should be reduced to a minimum, by having all business conducted in Committee, and leaving the evening over general matter.

Ramsay Radio Supplies

AMPLIFYING PANELS COMPLETE WITH TRANSFORMER.

AMPLIFYING PANELS COMPLETE WITH TRANSFORMER.

AMPLIFYING PANELS COMPLETE WITH TRANSFORMER.

AMPLIFYING PANELS COMPLETE WITH TRANSFORMER.

AMPLIFYING PANELS COMPLETE WITH TRANSFORMER.

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AMPLIFYING PANELS COMPLETE WITH TRANSFORMER.

AMPLIFYING PANELS COMPLETE WITH TRANSFORMER.

AMPLIFYING PANELS COMPLETE WITH TRANSFORMER.

Write for our New Catalogue Post Free on request

RAMSAY SHARP & CO. LTD.

Radio Engineers, 217 George Street, Sydney, N.S.W.
Front view of Mrs. Colville's Combined Receiver and Transmitter to be used for Relay Work.

In grateful recognition. As a token of appreciation of radio and those immediately concerned with it at sea, the three operators of the M.S. Empress of Victoria have each received a pair of Zeiss prismatic binoculars. Their vessel was instrumental in saving eight hundred passengers and the crew of the Hamburg America Line's Hapsburg, which foundered off Spain.

Several other ships received the wireless signals of distress, and radio was also responsible for the concerted fashion in which the rescuers went about their work. The German Government and the Hamburg American Line singled out the wireless operators on board each vessel for awards.

NO MORE RADIO TIPS.

Amendments made in the new Bill introduced into the Canadian Legislature by Attorney-General, Hon. W. K. Day, centre and posted any bills, odds, prices, or other racing information spread by walk. Distributing news of this sort is the other is to be made Illegal. Hence has not until now been aimed in the Canadian criminal code for whose domain's federal legislation on betting an horse-races was brought into the Dominion Parliament, the Bill named only telegraph, telephone, rail or express, or forbidden means of sending information. A section of the Criminal Code will have to be amended that such may be killed.

Do not "lost" any kind of a battery by "shooting" it with a pair of wires, as a wire, this injures it. The best way is to use a "collar" across the battery when it is discharging at its normal rate.

Back view of Mrs. Colville's Set, showing Wiring.
The wireless weekly: the hundred per cent Australian radio journal

August 24, 1929

WIRELESS WEEKLY

Amateur Receiving Stations

AMATEUR WIRELESS LICENSES: NEW SOUTH WALES

Wireless Licences for experimental purposes have been issued during the month of May, 1929, to the following:-

Name, Address

Adams, G. S. E., Anzac Avenue, Woyang, R.

Davies, L. C., 440 Glebe Point Rd., Glebe Point, R.

McKean, H. G., 117 Prospect Road, Summer Hill, R.

Dibbs, K. E., 24 Wanda Road, Mosman, R.

Pearson, A., 312 Macauley St., Albion, R.

Franklin, A. A., 32 Wellington Rd., Marrickville, R.

Harrison, G. A., Cress St., Guildford, K.

Cutting, B. N., Camilla Rd., Vaclense, Sydney, R.

Sneddon, N. N., 239 Burwood Rd., Burwood, R.

McNamara, G., 155 Palmer St., Darlinghurst, Sydney, R.

Lomas, G. E. H., Le Collett Rd., Erskine, R.

Mitchell, T. W., 19 Westmoor Rd., Sydney, R.

Pike, R. H., Hall's Ed. St. John's Park, B.

Robinson, V. J., "Lenten", Wynara Rd, Plains Pipers.

Parker, H. H., Albyn Rd., Strathfield, B.

Kewskerly, L., "East Anglic", Young St., Wahroonga.

Woods, J. R., "Fussa", Roslyn Ave., Roseville, R.

Turner, A. W., "Chiswell", Calypso Ave., Manly, R.

Cooksey, T. K., 146 Hidden St., Ashfield, R.

Phillips, F. H., R.

Page, J. W., 16 Gorgias St., Ashfield, R.

Barker, H. A., 31 Traflagar St., Stanmore, R.

Bosher, G. L. B., 28 Grantham Grove, Dulwich Hill, R.

Wood, T. F. T., "Winam", Lavender Ave., Manly, R.

Chleffit, A. B., "Adurah", 12 Oak St., Ashfield, R.

Richards, F. E., "Lone", Banks St., Parramatta, R.

Kable, C. P. F., "Altar", Macquarie st., Leichhardt, R.

Burt, R. H., "Peak", T. R., Bondi, R.

Tucker, B. L., "Glenbrook", Illawarra Rd., Marrickville, R.

Gregson, J., Cranberry St., Canterbury, R.

Mackay, J. M., 18 Wigge St., Hurstville, R.

Bogdanski, H. E., 16 Murray St., Croydon, R.

Leaton, R. L., "Ashara", Greenhill St., Croydon, R.

Parker, R. I., 280 Queen St., Ashfield, R.

Gibbons, T. G. G., Seton Forrest, R.

Burke, A. A., 386 Victoria Ave., Chatswood, R.

Chandler, E., 4 Alberts St., Newtown, R.

Trentham, R., 150 Corrane Rd., Stanmore, R.

Essett, T. B. E., 56 Barden St., Arncliffe, R.

Grice, B. H., "Wesford", Rosewall Rd., Gordon, R.

Cummins, F. E., "Suton", Greenthorn Rd., Plumpton, R.

Curtin, C. H., Prince Edward St., Long Bay, R.

Forrest, E., Hill St, Campbell, R.

Arndell, J. B., "Woonan", Mount Ousby, R.

Henry, A. B., Campsie St., Campsie, R.

Adam, J., Pennant Hills Rd., Normanhurst, R.

Cunies, G. A. C., 31 Oak St., Ashfield, R.

Gilhes, J., Bayswater Rd., Reigl, R.

Hation, C. J. P., 24 Barton St., North Sydney, R.

St. Stammits' College (Rev. G. A. Templetten), Battleax, R.

Round, G. W., "Seabird", Military Rd., Mosman, R.

Holmes, H. G. L., 55 Military Rd., Stanmore, R.
The wireless weekly: the hundred per cent Australian radio journal

August 24, 1923

Nature of

Name.

Address.

C. McLoughlin, A. B.

Weekinmore Rd, Cremorne, R.

C. Lenox, N. V.

Cullen St, Brunswick Park, R.

C. Chilton, F. G.

Chilton Ave, Waverley, R.

C. Flanagan, C. H.

8 Waite Ave, Ashburyville, R.

C. Phelan, W. B.

Parnell St, Hilliard Park, R.

C. Wisemant, J. G.

The Mill, South, R.

C. Concannon, W. B.

12 Railway Parade, Hurstwood, R.

C. Punampton, R.

45 Victoria Rd, Delwich Hill, R.

C. Francis, J. E.

67 Williams St, Redfern, R.

C. Craig, J. G.

Erie St, Northbridge, R.

C. Loggen, J. M.

Lansuck Rd, Pymble, R.

C. Wright, E. J.

Caradoc Rd, Oxendale, R.

C. Jacoby, C.

50 Mount St, Coogee, R.

C. Wood, M. B.

45 Wood St, Hunter's Hill, R.

C. Stenking, L. A.

Herston Rd, Northcote, R.

C. Conlyon, J. J.

Westworth Falls, R.

C. Finch, T. S.

Herricks St, Clunyeed, R.

C. Anderson, J.

17 Westbourne St, Petersham, R.

New System Tolls

phone (B. 8) 1880 Castlemartg St, Sydney, R.

New System Tolls

phones (B. 5) 1881 Dallus St, Cremorne, R.


c.

McKinnon, A.

27 Milham Rd, Cremorne, R.

C. Kelin, E.

New South Head Rd, Wavertree, R.

C. Dyson, N. H.

13 Hume St, Summer Hill, R.

C. Day, G. M.

128 Catherine St, Leichhardt, R.

C. Waltes, A. J.

Elbow St, West, Kurneley, R.

C. Willsom, P. C.

8 St. Andrews, Balheford, R.

C. Baggs, E. M.

5 Blue St, North Sydney, R.

C. Beecroft, F. M.

29 Beaconsfield St, Willoughby, R.

C. Smith, R.

18 Llitchfield St, Cremorne, R.

C. Cartwright, J. D.

22 Callungard St, Drummoyne, R.

C. Box, A. B.

62 Allen St, Leichhardt, R.

C. Blackey, F. P.

49 Portmell Rd, Kibworth, R.

C. Milne, L. R.

14 Albert St, Merrybush, R.

C. McDonald, R. J.

234 Mcdonalds Point, R.

C. McGowan, C.

Hillcal Ave, Ashfield, R.

C. Lawlor, R.

High St, Freoath, R.

C. Mitchell, A. F.

Newman Techinal School, Leichhardt, R.

C. Williams, E.

47 Merrickland Rd, Merrylands, R.

C. Styles, R. G.

Carrum Downs Rd, Alford, R.

C. Gilman, W. A.

92 Ralstoun St, Darlingtorm, R.

C. Lower, R. B.

"Dargle," Lower Parramatta, via Warragul, R.

C. Kield, E. T.

152 St. Andrews St, Darlingtorm, R.

C. Sproston, C. V.

11 Aberfoyle Parade, Ashfield, R.

C. Bruton, R.

704 Windsor St, Paddington, R.

C. Chambers, T. M.

46 Towells St, Mayfield, near Newcastle, R.

C. Chadle, J. B.

Jubilee St, Lidcomb, R.

C. Jones, J. F.

Anchor St, Clunsey Rd, R.

C. Halpem, E. W.

32 Gray St, Kogarah, R.

C. Horwood, C. A.

61 St. George Rd, Artarmon, R.

C. Holt, F. P.

"Dwyer," Brougham St, Woonm, R.

C. Harrison, J.

30 Warragul St, Armidale, R.

C. Brown, R.

14 Sacred Heart Monastery, Kyneton, R.

C. Smith, W.

58 Baker St, Tamworth, R.

C. Galt, C. M.

Highway Rd, Corrimal, R.

C. Agel, A. T.

40 Villiers St, Rockdale, R.

C. Campbell, B. C.

Cambridge St, Kensington, R.

C. Titman, K.

145 Manning St, Wollongong, R.

C. Wood, R. G.

249 Park Rd, Woolloongi, R.

C. Wren, J. F.

87 Leicester Rd, Sturtfield, R.

C. Bivell, H. H.

37 Pack Rd, Hornsby, R.

C. Watters, A. E.

114 Albany Rd, Stanmore, R.

C. Pesevans, D. K.
Build Yourself an Amplifier

Audio Transformers
Airway £1/1/6
Jefferson £2 5/-

From the materials here listed, a Complete Audio Amplifier can be constructed. Any number of stages can in this way be added giving any desired Volume of Music or Speech.

Valve Central Panel £1/7/6
Valves from £1/15/0

Magnavox Loud Speaker £12/10 - Brown’s £5/12 - Western Electric £3 15

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Tel. B2261

Quality Radio Supplies

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Radio Dept.
60-62 Goulburn St., Sydney
(1 door from Pitt St.)
WIRELESS RECEIVERS

"IT'S THE INSIDE THAT COUNTS"

GECOPHONE HEAD SETS are very light and comfortable to use. An important feature is the single head band which is enclosed in leather, and is easily adjusted to fit any head. It entirely overcomes the disadvantages of the two piece metal head band. The 8ft connecting cord is attached to one ear piece, and therefore does not get in the operator's way. Connection to the other ear piece is made by two flexible wires passing through the leather band.

British General Electric Co. Ltd.
"Magnet House," 154-6 Clarence St., Sydney

Magnet House, 203-7 Murray St., Perth
Sale Agents: Norman Bell & Co., Brisbane
Morris, Herbertson Ltd., Suva and Levuka, Fiji

Cases—
Drawn from hard Aluminium, 3/8m. thick.

Earcaps—
Made of genuine Ebonite, and shaped to fit the ears.

Diaphragms—
Sterling.

Magnets—
Best Quality Toughen Steel.

Cords—
Moisture Proof, Black and Lift, with Metal Tips.

Weight: ONLY 11 oz.

2000 chans .......................... 62/6
4000 chans .......................... 85/6

81-8 Magnet House, 390 Bourke Street Melbourne
And at Wellington, Dunedin and Auckland, N.Z.