WIRELESS WEEKLY

THE HUNDRED PER CENT AUSTRALIAN RADIO JOURNAL

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A Talk with Wireless Weekly.

A Great Achievement.

In picking up American amateur signals the Australian Experimenter has shown that he is worthy of recognition, not only in Australia. No doubt the American amateur as a transmitter can show us points, but as a receiver the Australian Experimenter as equal if not ahead. We offer our congratulations to the three or four experimenters who picked up the "MOTT" signals.

MR. FISK'S RETURN.

Mr. Fisk, general manager of Amalgamated Wireless Ltd., has returned. Mr. Fisk was President of the Wireless Insitute for four years, 1918-1922; during that time he did yeoman's work for the experimenter. We sincerely hope that Mr. Fisk will continue to help the Amateur Experimenter, both personally and through the Company he represents. We suggest to Mr. Fisk that a little testing with Amateur Stations by Amalgamated Wireless Ltd's. Station on the 400 metres' band, two or three nights a week, would not be amiss.

AMATEUR TRANSMISSION.

Amateur transmitting stations seem to be springing up like mushrooms; every evening when we listen in there seems to be some new station working. We would like to see more Interstate telephony testing going on. Only one or two stations so far have carried out actual tests with amateurs in other States.

HOWLING VALVES.

This is the greatest menace we have. During the last fortnight the percentage of interference by howling valves has increased by at least 200 per cent. Genuine experimenters you must be up and doing, if you don't you will be done. We feel sure that the man who is to blame is the man who is illegally using a valve on a crystal license or no license at all. It behoves us all to seek these interferers out and warn them, and if this is not sufficient, report them, and they will be summarily dealt with.

RADIO RELAY LEAGUE

A meeting of all transmitters or intending transmitters has been called by Mr. Colville, for Monday, 21st inst., with the object of forming a Relay League.

The league will be formed for the effective relaying of messages of experimental nature only, between various stations throughout Australasia and abroad, and for practical improvement of amateur 2-way wireless communications. The leagues should tend towards increasing the speed of operating and the correct procedure of handling traffic. Persons interested should communicate with Mr. S. V. Colville, at Eskdale Church, Drummoyne.

The meeting will commence at 8 p.m., at the Royal Society's rooms, Elizabeth St., City.

ALL CLUBS' NIGHT—WIRELESS INSTITUTE MEETING, MAY 10th.

Australia - America.

Two Stories of the Signals

Mr. Chas. Maclurcan — Mr. J. Pike

HISTORY OF A TRANS-PACIFIC TEST.

TRUE STORY OF THE M-O-T-T SIGNALS.

To the Editor, "Wireless Weekly":

I will be obliged if you will publish this letter in your paper as a definite statement, giving the facts of the recent test with Major Mott, of Catalina Island, which have resulted in so many malicious and unjust statements that are being circulated about myself and Mr. Cooke.

Early last year, it will be remembered, Mr. C. A. Gorman, of Arncliffe, logged some weak signals on a low wave-length, that although unverifyable, gave every reason to suppose, by their text, were of American origin.

This started the idea in my mind that a definite test should be arranged, and when, some months later, I discussed the matter with Mr. J. G. Reed, he suggested the name of Major Mott as a suitable person to get in touch with. This course was decided upon, and Major Mott was accordingly written to. **It should be clearly understood that at this time neither Mr. Reed or myself had heard any mention of any other Trans-Pacific tests.**

In this connection I will quote from my first letter to Major Mott:

"The best months for receiving to this end are May, June, July and August. During these months it is dark at 6 p.m. It would be of no use if you transmit before this hour, as it would be necessary to have darkness all the way. This would mean that you would have to transmit not before midnight on your side, so I will get the better of you there.

I will be ready to work a test the first week in May if suitable to you, and would suggest that you transmit for six nights for half an hour each night, twelve midnight your time."

In reply, Major Mott expressed himself as only too pleased to work the tests with us, and from then on numerous letters and cables have passed between us arranging all details as to times, wave-length, power, etc.

Mr. F. Basil Cooke was asked to assist Mr. Reed and myself, and a special low-wave receiver was designed and the construction started.

As time went on, and we heard that the official Trans-Pacific Tests, that are now in progress, were fixed for May 1st, it was quite apparent to us that our test must be held before this date owing to the interference that was to be expected from stations competing.

It has been said that our aim was to get ahead of the official Trans-Pacific Tests. This is not true, nor is there any sense in the statement. The Trans-Pacific Test is a competition, not for the first to receive amateur signals from America, but for reception of the greatest number in a given time.

The first American amateur signals have already been received here some weeks ago, in fact it is quite probable that the signals received by C. A. Gorman over a year ago were of American origin.

Our test was scheduled to com-

mence on Saturday, April 28th, and was to continue for six nights. Major Mott was to transmit the word "M-O-T-T" from midnight to 1 a.m., Californian time, which is 6 p.m. to 7 p.m. our time. It was also arranged that I was to transmit the word "M-O-T-T" for thirty minutes immediately his time was up, i.e., 7.30 p.m.

For the first three nights, Messrs. Cooke, Reed and myself were present. On Tuesday, May 1st, Mr. Reed and I worked the station, on Wednesday, May 2nd, Mr. Cooke was there.

Thursday, May 3rd, was spent going over the receiver, and it was then that a wrong connection was found, due to my carelessness, which would easily account for the lack of results. On all these nights we had carried out our part of the programme, and transmitted the word "M-O-T-T," 7 to 7.30 p.m., but up to this time we had not received Major Mott's signals.

About 8 p.m. (Thursday, May 3rd) Mr. Pike rang up to say that he had heard the word "M-O-T-T" about 7.10 p.m. (I might state here that this conversation was overheard by a third party, who was listening on the extension.)

I then told Mr. Pike all about the test, explaining that Major Mott finished transmitting at 7 p.m., and that I then commenced. Mr. Pike then said he had heard the signals before 7 p.m., but was most indefinite about the time. When I suggested cabling Major Mott that his signals had been received, Mr. Pike thought it would be better not to, as he was not absolutely sure. However, it was arranged for Mr. Pike to listen in again on the next three nights, and in the meantime I sent a cable to Major Mott, as follows:—

"Think heard. Continue three more nights."

In fairness to Major Mott, and to give every chance of his signals being received, I also acquainted Mr. C. A. Gorman, of Arncliffe, of the arrangements, and asked him also to listen in on the next three nights.

On following night, Friday, May 4 (Mr. Cooke being present at 2CM) all three stations succeeded in hearing the signals.

As usual, I transmitted "M-O-T-T" at 7 p.m., ending up with several QRZ's.

I can assure you that it did not matter to me who got these signals first or most frequently. It was sufficient satisfaction to know that the test I had arranged and had occupied my thoughts for over six months, was a success.

It was impossible, however, and I still hold this view, to accept Mr. Pike's Thursday night report as an authentic reception, for, as I previously stated, he was so indefinite about the time before 7 p.m., and not sure enough to allow me to cable the result.

However, Mr. Pike says now that he is quite sure he received the word "M-O-T-T" at 6.42 p.m., although he still admits of my statement about the cable.

I emphatically state that in no way do I desire to belittle Mr. Pike's qualifications as a skilled wireless operator, nor do I doubt his ability to show me many points in the wireless field. On the contrary, I consider that in the light of subsequent events, the boot is "on the other foot."

These are the facts of the actual reception of the signals.

It was left to Mr. Cooke to draw up a report of the test for publication.

This was done on Tuesday last, and the report which Mr. Cooke had hurriedly written out was given to me to read in Mr. Pike's presence. I glanced through it and passed it on to Mr. Pike, who read it, said "that's alright," and made no further comment. Mr. Cooke was present at this time.

It transpires that in this report there were several inaccuracies, due no doubt to the hurried way in which Mr. Cooke drew it up. I personally, in glancing through it did not notice anything wrong, but Mr. Pike says afterwards that he saw several mistakes, although for reasons best known to himself **he did not draw either Mr. Cooke's or my attention to the matter.**

The errors in this report have been taken as a basis for the rumours and statements freely handed round in wireless circles by some person or persons unknown. One such statement is that Mr. Cooke and myself deliberately mis-stated the facts, and by putting in wrong dates made it appear as though we were the first to receive the signals and thus belittle Mr. Pike's performance, and take from him the kudos to which he was entitled. (Bear in mind that the first signals from America were received some time previously to this test.)

Now as to those dates:—

It will be noted from the facts already given that the first authentic reception of Major Mott's signals by all three stations was Friday, May 4th. (We still cannot accept Mr. Pike's first report as conclusive, although it is quite prob-

able he did get the real signals). Mr. Cooke's report says May 1st instead of May 4th. Now, it hardly seems logical that firstly if this was deliberately pre-dated, May 3rd was not taken as this would be one day earlier, the date of Mr. Pike's first report. And secondly would the report have been given to Mr. Pike to read if there had been any intent to mis-state facts. But it is a very strange thing that Mr. Pike did not point out this mistake when he read the report.

It may be asked, would this report have been shown to Mr. Pike had he not been present. In all probability it would not have, as there would have been no reason to do so.

The very fact of sending the report to the papers is in itself sufficient to show that any inaccuracies in it were purely typographical or accidental, for no one in their right senses would deliberately publish mis-statements that could so easily be refuted.

I quote below the paragraph in the report alluded to:—

> "May 1st, 6.40 p.m., Mr. Maclurcan was listening at this time, and Messrs. Cooke and Reed did not have to be told that at last success had rewarded their labours.
>
> The 'phone confirmed our reports. Mr. Pike rang up to report having heard Major Mott, and the time he first heard him coincided with that at 2CM. Mr. Gorman also was successful.
>
> The following night there was very little difficulty in reading "M.O.T.T," and Mr. Pike also received him. . . . ."

In addition to the date, which should have been May 4th (Friday), it states that Mr. Reed was present. This is a mistake, as Mr. Cooke was the only one there that evening. But as Mr. Reed was one of the three engaged in this test, Mr. Cooke did not wish to omit his name on the first night of success.

In the next paragraph it says that the time Mr. Pike first heard the signals coincided with ours. This, of course, alludes to the first time on Friday evening, May 4th. Mr. Pike's Thursday night results, were not, and are still not taken as authentic.

But note in the third paragraph of the report, it states that Mr. Pike received the signals on the following night, Saturday, May 5th. Actually, Mr. Pike did not receive "M-O-T-T" after the Friday night, but he was given the credit of receiving the signals two nights.

One other paragraph in the report now taken exception to by Mr. Pike was the following:—

> "So as to have every chance of receiving these signals, two other prominent experimenters were invited to listen-in at their respective stations. These two were Mr. J. H. A. Pike, of Epping, and Mr. C. A. Gorman, of Arncliffe."

It is not the wording of this that is taken exception to, but its position in the report, which may convey the idea that Mr. Pike knew of the arrangements much earlier than he did, and thus took away from him the additional honour of having picked up the signals by accident without any previous knowledge of the times and wave-lengths.

This may be so, but to those who read the Pike-inspired article written by Mr. Mingay in the "Telegraph" last Wednesday, the impression was conveyed almost at the beginning of the article that Mr. Reed and Mr. Pike originally suggested the arranging of the test to me.

If Mr. Pike was so particular that honour should be placed where due, why was Mr. Gorman's name omitted? And why did he omit to state that 2CM received the signals on three nights. Mr. Mingay had a copy of Mr. Cooke's report, which mentioned Mr. Gorman's part in the matter, before he wrote his article.

It has been further said that Mr. Gorman and Mr. Pike were invited to listen-in, because we were incapable of getting the signals. This is not true, but in any case would have shown the right spirit, for the selfish way would have been to prevent any one from getting them in the event of our failure.

(Sgd.) CHAS. MACLURCAN.

Agnes Street, Strathfield,

Friday, May 11th, 1923.

We have read the above letter, and state that to the best of our belief it is correct, especially where our names are mentioned.

(Sgd.) J. G. REED.

F. BASIL COOKE.

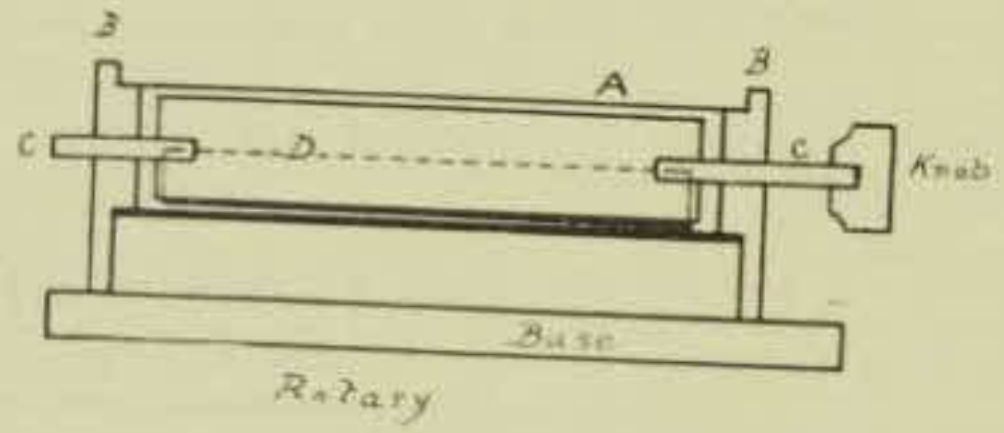
(Continued on Page 12.)

2/6 will be paid for the best "BIT" of wireless humour sent in each week. Articles sent in will become the property of Wireless Weekly Newspaper. 2/6 will be paid for each humorous drawing accepted.

MAKE YOUR OWN

A Simple Variable Condenser.

The condenser described below is of very simple construction, and can be made up at a cost not exceeding three or four shillings. It may be made up either as a rotary or a sliding type, both of which are shown in the illustrations.



A is an incandescent gas chimney into the ends of which are fitted pieces of wood, BB, these being about $\frac{1}{4}$in. thick and entering about a quarter of an inch into the glass tube. Take care that they are not a tight fit, or you will need a new chimney. In the centres of BB should be drilled a hole in which slide easily two brass rods, CC, three-sixteenths or a quarter of an inch in diameter. These rods should be one and a half inches long for a condenser of rotary type, and half the length of the glass chimney, plus one and a half inches for one of sliding type. DD is a wood cylinder quarter of an inch less in diameter than the interior of the glass tube, and three-quarters of an inch shorter than it for a rotary condenser. For a sliding one, the diameter is not altered, but the length is, half the length of the glass tube, minus half an inch. In the centre of each end of this wood cylinder and truly axial is drilled a hole half an inch deep and of a size into which the brass rods will fit tightly.

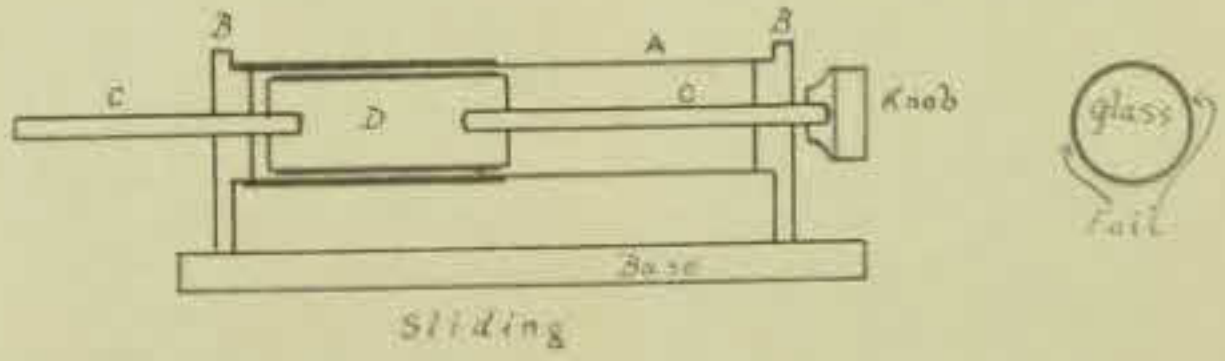
The coatings of the condenser are of tinfoil. For a rotary one cut a piece half an inch shorter than the glass, and wide enough to wrap half way round it. For a slider, cut the foil half the length of the tube, minus quarter of an inch, and wide enough to wrap once round it with quarter of an inch overlap.

Paint one side of the foil with shellac varnish, avoiding lumps, and when it is nearly dry press it smoothly down on the glass, rubbing it gently into close contact with a soft rag.

Coat the wood cylinders in a similar way, and drive in the brass rods.

Solder a piece of wire, about No. 28 S.W.G., to one of the rods close to the wood cylinder, lay the wire in a groove cut with a knife in the wood, and bring it up to the foil coating, to which it should be connected by a small round head screw and a washer. Wrap a length of bared wire three or four times round the glass tube to make contact with the outer coating.

A base board, an inch or two longer than the glass, about four inches wide and half to one inch thick should be prepared. This is shown at E. The countersunk screws from below two terminals, and an



ebonite knob are now needed to finish the job. The former may be fitted to the base in many ends BB are held down by convenient positions, the wire

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A FEW SUGGESTIONS

By E. JOSEPH

It is unfortunately a fact that the average "experimenter" in radio does not very often carry his "experiments" beyond listening to the efforts of other experimenters, holders of transmitting licenses, to produce music usually by the aid of a gramophone.

These latter—again unfortunately—all seem to "follow my leader" in selecting almost identical circuits, and in their adherence to four hundred metres wave length.

Take the case of the mysterious "Motz" signals. Did any amateur do the obvious thing and ring up a "loop aerial" to determine the direction from which they emanated?

As far as is known, no; not one of them had sufficient initiative to wind a few yards of wire on a couple of pieces of wood, or on a few nails in the walls of his operating room. Yet this would have provided an experiment well worthy of attention and it is a pity that the author of the signals above referred to has disclosed his identity.

The lower band of wave length viz., 150 to 250, which does not seem to have been exploited at all here, offers numerous interesting problems in tuning and adjusting both on receivers and transmitters. The very slight alteration of inductance or capacity required to effect a change of wave length sufficient to "tune out" signals would lead to the design of various "vernier" tuning devices the development of which would give a new zest to wireless experimenting proper as distinct from simply listening in to broadcast programmes.

Another field suggests itself. Why not try out systems oscillating at wave lengths of less than 100?

For the work accomplished by most amateur transmitting stations, a wave length of 30 or 60 metres would be quite suitable over a few miles, and would introduce its own problem of tuning.

Receiving valves could be used to start with and intercommunications effected between two stations separated by a few hundred yards, and when the difficulties were understood, power tubes could be used. It is by no means a difficult matter to set a valve oscillating at a wave length of as low as 30 metres. The author has gone below this in efforts to excite free oscillations in coils with a view to thus determining their self-capacity.

Another interesting field for investigation lies behind an experiment carried out by the author some years ago. The Poulsen Arc acts as a source of oscillations simply because the gaseous arc has what is known as a "negative characteristic" that is its resistance does not remain constant but appears to decrease as the current passing through it is increased. The arc is formed in an atmosphere of hydro carbon vapour because it has been found that these apparent changes of resistance have a greater magnitude under these conditions than in air. There are a number of materials which have negative resistance-temperature co-efficients so that their resistances are high if measured with small currents—which do not heat them up to a very high temperature—and low if large currents and therefore high temperatures are used.

Of these we may note the carbon filament glow-lamp and the now obsolete Nernst lamp. A little calculation, a few examples worked out by simple arithemetic, will indicate that it should therefore be possible to obtain continuous waves by shunting a carbon filament lamp with an oscillatory circuit.

The author tried this some years ago and found that by careful adjustment he was able, using a 100-volt, 50 candle-power lamp, lighted from a gas engine driven circuit, to tune a wave meter coupled to the shunt inductance until the sound of the beats and explosion strokes of the engine were distinctively audible on a crystal detector and telephone at a wave length of about 120 metres. He was unable to devote much time to the subject, but suggests that using A.C. 240 volts and heterodyne wave-meter it is quite likely that a reasonable amount of energy may be picked up. If so, this would be of practical advantage in long wave reception as the detuning of an oscillating valve system to cause beats, which is necessary with a self heterodyne, would be unnecessary, a non-oscillatory valve circuit with reaction, used only for amplification and tuned accurately to the incoming waves, being used and the loop providing a separate heterodyne.

The Nernst filament has so steep a characteristic that—until it becomes a dull red it is practically an insulator, its resistance then rapidly falls to a comparatively low value. Probably a stock of these lamps is hidden away at the establishment of one of the supply houses, and could be obtained at low cost for experiment, they now being of no commercial value.

Yet another suggestion. Reception from the experimental 400 metre nominal 10 watt stations suffers considerably in many cases from interference by V.I.S. It should be possible to "bye-pass" a considerable amount of this interference past the detecting circuit, not all, because as V.I.S. is a spark station, there will be a shock excitation of the 500 metre tuned circuits.

Arising from this there is the interesting problem of double receptions. Why not couple a simple form of 600 metre receiver to the bye-pass circuit on which the commercial wave can be heard by one observer while another listens to telephony on 400 metres?

Continued on Page 16

Fault Tracing and Maintenance

By "Electrone."

In the last article we tabulated a number of ways in which the aerial-earth circuit might be responsible for no signals being heard in the telephones. Should the aerial-earth circuit be found to be free from any of these faults, the cause of the absence of signals may be looked for in (1) the detecting and amplifying circuits, and (2) the telephone circuit. If a crystal detector is used, the fault may be due to any of the following causes:

(1) An insensitive contact.

Some points on the surface of a crystal are more sensitive than others, and the best position on any crystal can only be found by experiment. After constant use the whole surface may have become rather insensitive, in which case the crystal should be reversed in its socket. Further new surfaces can be provided by breaking the crystal in two.

(2) The presence of rust or other insulating substance.

This may be found on the tip of the contact spring, or a thin layer of dust on the surface of the crystal itself.

(3) A loose connection between the crystal and the socket.

Or, in the case of a crystal that has been embedded in solder, an insensitive crystal. Under certain circumstances the latter may be due to the application of heat in soldering the crystal.

When valves are used, either for high frequency amplification, detecting, or low frequency amplification, the fault may be directly due to:

(1) The filament battery being reversed.

This may not necessarily result in no signals being heard but the probability is that it will. If long leads are taken from the accumulator that lights the filament it is quite an easy matter to get them tangled and reversed.

(2) The high tension battery being reversed.

This may be due to the two external leads being crossed, or to one or more wrong internal connections if several separate cells are used to make up the battery.

(3) A faulty connection between the "legs" of the valve and the socket that contains them.

This is not a very common fault—a fact which makes it all the more easy for it to escape one's notice when it does occur. The valve should be fixed firmly in its socket.

(4) A break in the continuity of the circuits.

For instance the windings of one of the intervalve transformers, or a wrong connection. It would be impossible, of course, to detail the numerous "wrong" connections that one might encounter. In the case of standard receivers, purchased ready made, there is no likelihood of the internal connections being wrong. On the other hand, if you have made and assembled your own receiver—well, there may be one or two leads on the wrong terminals! When all else fails, therefore, the only thing to do is to go over all the connections carefully with the aid of a diagram.

If none of these tests succeed in enabling you to get signals, the telephone circuit will probably be the cause of the trouble, in which case the fault may be due to:

(1) A break in the leads which connect the ear pieces to the terminals on the receiving panel.

These leads are made of very fine strands of wire, and the strain to which they are subjected in practice frequently results in breaking them.

(2) A faulty connection at any of the four terminals on the ear pieces themselves.

In grasping the telephones to place them on the head, one's hands invariably touch these terminals, tending to loosen them in the course of time.

(3) A break in the coil winding of the telephones, or an internal disconnection.

Should the telephone slide from the operating table to the floor, for instance, the shock may be sufficient to loosen a small screw inside, leading eventually to a disconnection.

The foregoing list of faults are among the commonest that are met with when a wireless receiver fails to give any signals whatever. When signals are received intermittently, coming and going at odd moments, the trouble may arise from:

(1) A swaying aerial which makes contact, intermittently, with some conducting surface.

In wet, windy weather, for instance, an aerial may be blown into contact with the branches of a tree, thus providing a direct path to earth for the signals; or the down lead may make intermittent contact with a metal mast or water-pipe, thus producing the same effect.

(2) A loose connection in any part of the receiver.

This is a frequent cause of intermittent signals. At one moment the connection is such that the electrical continuity of the circuit is broken; then, in response to the slightest vibration (caused by leaning over the instruments, for instance), contact is established again and signals get through. This fault may often be located in the telephones, the slightest motion of the head in either direction being responsible for signals appearing and disappearing alternately.

(3) A "short" in the tuning condenser may also produce intermittent signals.

As you turn the condenser in one direction, signals may get gradually louder. Then, at a certain point, they disappear altogether, reappearing again, perhaps, when the condenser has been turned through a further angle.

When signals are consistently weak, and apparently incapable of being tuned to their proper strength, the fault may be due to:

(1) An insensitive contact point, in the case of a crystal detector.

This may, of course be easily rectified by trying new points of contact.

(2) Insufficient filament current or plate potential, in the case of a valve.

A soft "whistling" is often heard when this class of fault occurs.

(3) An over dose of filament current or plate potential.

With some valves this is an important consideration and seriously affects reception and telephony or R. W.

(4) A permanent "short" in the tuning condenser.

The condenser concerned is then useless and must be removed and the trouble corrected.

(5) The use of "fixed" condensers or inductances of too high or too low a value for the wave-length it is desired to receive.

The variable tuning arrangements are, in that case, useless so far as the particular station to be read is concerned.

TESTIMONIALS

By John D. Forrest, in "Radio News."

Messrs. Rackett & Clatter.

I saw your advertisement in the Collar Button Journal. Before using your kitty-kat whiskers my set was working poorly. Eiffel Tower only came in loud enough to tear three doors off the hinges. After using only twenty-seven dozen of your Kitty-kat Whiskers the signals have now torn the house down and we are living in the cyclone cellar.

Truly,

Willie Bleevit.

Bang & Batt'e Co.

Before using your Spaghetti-Wound Variometer I could only hear Saigon, India, but now I can hear all over the coal house, 963 feet from the 'phones.

Your friend,

Helva Noyes.

Earthquake Loud Speaker Corp.

With only 14 stages of amplification I brought in Annapolis so loud last night that the police broke the door down thinking it was a street car strike. Thanking you again.

Manuel Acutear,

Pickledale, Conn.

Hurts Wave Company.

Using your excellent blueprints I built a transmitter which radiates 1000 milliamps to the ampere. Mr. Humm Dingger at American Tickle, Nova Scotia, reports my signals as QRT. This is over a distance of nearly 69,732½ miles.

Lovingly,

Dan McGrew.

Wrattle & Squeak, Inc.

Your brass plated radio panels are the best we have ever used. The canary bird concert from BANG came in so loud that two legs of the table were nearly bitten off.

Your friends,

Phan Brothers.

Wampus Kitty Whisker Co.

One night last week I listened in for three days, and using your DF Receiver, heard 786 stations at the same time. Sig-

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SOCIETY NEWS by Wireless

Some are Interested, Some are——?

nals were clear and strong as Sloan's Liniment.

Faithfully,

Denny Lyde.

P.S.—Your Micolite Diaphragms are great.

Clankety Clank & Bro.

I can faithfully say your Double Barelled Grid Leaks are the worms shoulders. Using only 600 volts on the filament, I worked 2DFS with 30 amperes in the 'phone cords.

Yours,

Otto Kroke.

Hiwide & Handsome Co.

The Fur Trimmed Ground Clamps shipped to me are O.K. Inserted in the 'phone condenser they increased the current 37 per cent. I now copy the transmitter across the street with only one 'phone.

Truly,

De Leerious Lashaway.

Marcel Wave & Tone-Ique Co.

Your Variable Phone Cord Tip is greatly efficient. The plates are well aligned and the inductance much higher than the binding posts I have used before.

Cordially,

Sech Trooly.

WIRELESS WILLIE'S WEEKLY WARBLE.

Dear Experimenter,

Beware that howling valve. Some young howler out Woollahra way was interfering with Mr. Marsden on Saturday night last. By the tone of Mr. Marsden's voice we gathered he was slightly heated. Mr. Marsden is to be congratulated on the test he put over last Sunday night. One man who listened in on my station was so delighted, that he already has a 3 valver going strong.

The operator at 2LI evidently has Saturdays off. I notice the voice is different on that day.

Mr. O. F. Mingay's little lecture in Wireless are worth listening in for.

The voice of Mr. Otto Sandal, of Manly, has been splitting the ether lately, but not on 600 metres. Some transmitters give their call too often, others too seldom. When sending music W.W. suggests twice with name and address before and after each selection.

Yours weekly,

W.W.

OUR WIRELESSES COLUMNS.

Wirelesses.

Mr. C. P. Bartholomew, although resigned from the Presideney and the Conneil of the Wireless Institute, New South Wales Division, is still an active and enthusiastic member.

Mr. P. Shaw, of Goondiwindi, the well-known radio enthusiast from our Northern State is now holidaying in Sydney.

Mr. J. H. A. Pike is about to be eleeted as an honorary life member of the Wireless Institute of Australia, N.S.W. Div., prominence and ability having been one of Australia's earliest experimenters.

Mr. H. A. Stowe is likely to be appointed Honorary Radio Inspector to the Northern Metropolitan area.

Mr. G. A. Taylor, inaugural chairman of the Wireless Institute of Australia, New South Wales Division, in 1910, has after many years again become interested. He was eleeted as a full member on May 10th.

Mr. R. C. Marsden's hum. We are very pleased to be able to state that this is nil.

Do you know that Mr. E. T. Fisk, managing director of Amalgamated Wireless Ltd., was a very active President of the Wireless Institute of Australia, New South Wales Division, from 1918 till 1922.

Mr. O. F. Mingay is to be congratulated in the results of his first night's trasmitting. We note with pleasure that he is giving small lecturettes on wireless during each test, which should be of great interest to all listeners in.

Mr. Joe Reed, the well-known wireless expert of Amalgamated Wireless Ltd., has become a member of the American Radio Relay League.

SHIPS YOU SHOULD HEAR THIS WEEK.

Nearing or Departing from our Coast.

BANDAI MARU	JAQA
BELTANA	MKR
BERENGAR	GJML
CANADIAN INVENTOR	XWT
CANADIAN RANGER	XVF
EASTENER	WGEA
ENOGGERA	VXG
EROMANGA	VHH
ASAMA MARU	JDYA
MARELLA	GBKJ
SAIGON MARU	JEV
KALFARLI	LGF
KNIGHT OF THE GARTER	MSQ
WESTFALEN	DWE
VILEL DE STR'B'RG	FLF
THALATTA	AWV
SIRSA	GDNQ
WOODARRA	GCFK
BANFFSHIRE	GVM
MAUGANUI	GFYB
NALDERA	GCTZ
WEST ISLIP	KIKX
EUCHUNGA	VJU

Continued from Page 5

MR. J. PIKE TELLS HIS STORY.

On Thursday evening last, May 3, I, unaware of fact that special private tests were being conducted, was ready for the official Trans-Pacific tests.

At 6.46 p.m., I was astounded to hear the signal "MOTT" in Morse coming through faintly, but clearly. As all keen experimenters are well acquainted with Major Mott's doings in the American amateur wireless world, I at once attached great significance to this signal "MOTT," and immediately communicated with the secretary of the test committee, but was unable to secure any communication between the received signal and the test signals.

I then communicated with Mr. Maclurean by 'phone, and after I had answered exhaustive enquiries he seemed convinced in his own mind that I had heard the signal, and it was then that he informed me of the private arrangements made and stated that he had not been successful, but offered his congratulations and also acquainted me with the further dates to listen in.

Continued from Page 6

from the external coating goes to one and a flexible a few inches long goes from the other to the end of the brass rod at F, where it is soldered. All that now remains to do is fit the knob on the other rod, and our condenser is complete.

Two such condensers form a very valuable addition to a "loose coupler" crystal receiver, and they are not to be despised as spares for experimenting with the more ambitions valve sets.

CHAIN OF RADIO STATIONS.

The Canadian Government is planning a chain of radio stations extending right into the Arctic Circle, which are now being completed. Six stations are planned, five of which will be in the north-west territories and another at Dawson. The stations on or near the Mackenzie River will be located at Fort Smith, Fort Resolution, Fort Simpson, Fort Norman and Fort McPherson.

Our Competition Column.

An order for 2/6 will be presented to the first correct solution received for each competition in these columns. The judgment of the Editor shall be final in each and every case.

COMPETITIONS.

(1)

A man owns a wire bird cage and in it is a bird. He wishes to know the weights. He weighs the cage with the bird on the perch. Just as he gets the weight the bird flies off the perch so he weighs it again while the bird is in flight. He then puts the cage in a box and weighs it again with the bird on the perch. The bird again flies round the cage so he weighs it again with the bird in flight. What are the differences in the weight?

(2)

(a) To name five weights, which, when added together, make 121 pounds; by means of which may be any intermediate weight.

(b) If a brick balances with ¾ of a brick and ¾ of a pound—then how much does a brick weigh?

The correct solutions and winners of competitions published in W.W., Vol. 2, No. 18, are as follows:

(1) 5/6 ohm. Mr. W. Bird, 48 Renwick St., Leichhardt.

(2)—(a) That that is, is. That that is not, is not. Is not that it? It is.

(b) He spoke from twenty-two to two, to two to two, to twenty-two uninteresting people.

(c) Time flies (insects) you cannot, they fly too fast.

(d) It was and, I said, not or.

(e) The owner of the Pig and Whistle, not satisfied with the way his sign had been painted, gave the following instructions to the painter: "Paint the sign again and leave more space between Pig and and, and and, and Whistle." Mr. S. L. Spencer, Violet St., Chatswood.

(3) 1, 3, 9, and 27 lbs. Mr. H. Parker, 17 Hopewell St., Paddington.

Orders for 2/6 are waiting for each of the above mentioned winners at Wireless Weekly Office, 33 Regent St., Sydney.

"DIAMOND CUT DIAMOND."

The Mexican Government, however, has the monopoly of all telegraphic and telephonic communications, and no private company, save by special permit, is allowed to receive or transmit messages. The only long distance telephones in Mexico belong to the great oil companies, and most of these have their own private wires. Every radio outfit coming to the Mexican frontier must be reported to the Government, and as at present these bandits know nothing about the new science, the Government believe they can frustrate the thieves by installing radio receiving and transmitting apparatus at headquarters (Tampico) and at the sea unloading stations and camps at Vera Cruz for the Agusi Company's benefit. Then "listening-in" will be virtually impossible, as the Government means to keep account of every receiving set in the country. The experiment will be carefully watched by the other oil companies (there are about thirty) and if successful the example will be quickly followed. The last paymaster to be held up was relieved of 42,000 pesetas, and of two Americans with him one was killed and one wounded. It is strange to reflect that it needed robbery and violence to bring radio into the Mexican Republic.

LEICHHARDT AND DISTRICT RADIO SOCIETY.

At the twenty-ninth general meeting of the Leichhardt and District Radio Society, held at the Club Room, 176 Johnston Street, Annandale, on Tuesday, May 8th, members were treated to an excellent lecture on the subject of chemical rectifiers, by Mr. H. F. Whitworth, a member of the Society and a demonstrator on the staff of the University of Sydney. Mr. Whitworth dealt excellently with his subject, which was illustrated by means of a demonstration of rectification of 240 volts A.C. to 6 volts D.C. The lecturer was accorded a very hearty vote of thanks by acclamation at the conclusion of his discourse.

When this report goes to press it is anticipated that the Society's aerial will be in position ready for use, and, with a height of 45 feet, and a length of over 100ft. excellent results should be obtained.

Inquiries from persons interested in radio work are welcomed, and should be addressed to the Hon. Secretary, Mr. W. J. Zech, 145 Booth Street, Annandale.

KURING-GAI DISTRICT RADIO SOCIETY.

At the last meeting of the Society, held on Tuesday, 8th May, buzzer practice was indulged officially for the first time.

Mr. Hilton, who has had considerable commercial experience, took charge of the key, having been elected as operator at the previous meeting. After the business had been attended to, the Chairman, in the absence of Mr. Mingay, who had arranged to deliver a lecture that evening, called upon Mr. R. Hill to lecture in his place.

Mr. Hill's lecture was most interesting, and did him great credit, especially as it was made up on the spur of the moment. Mr. Hill dealt with valves and their operation, and explained some very useful diagrams. A hearty vote of thanks was then accorded to Mr. Hill for his excellent lecture.

The secretary requests members to regularly attend the buzzer class, which commences on meeting night at 7.30 p.m.

The next meeting of the Society is to be held on Tuesday, 22nd May, at 8.15 p.m., in Almond's, Victoria Avenue, Chatswood. The subject of the evening being: "Buzzer practice, 7.30-8.15; and short papers and lecturettes by various members."

For further information concerning Society matters, please communicate with Hon. Secretary, R. R. Wilshire, "Lauriston," Help Street, Chatswood.

BONDI RADIO CLUB.

At the last meeting of Bondi Radio Club, held at 276 Birrell Street, Bondi, on 8th May, there was a good attendance of members. There were also three new members. Mr. R. Shaw, who was also present, gave an interesting talk on wireless matters in general, which was greatly appreciated by all present.

No further meetings will be held at 276 Birrell Street until further notice, as we are negotiating for a club room in a more central position. Members are therefore asked to watch these columns for further particulars.

Address any communications to: A. H. Callaway, Esq., 33 Ocean Street, South Bondi.

Members of the Club attended the Institute's lecture on Thursday night which was very much enjoyed.

WESTERN SUBURBS AMATEUR WIRELESS ASSOCIATION

The usual weekly meeting of the club was held in the club room, Auburn, on Wednesday, 9th May.

After the general business of the meeting was dispensed with, Mr. Reid lectured on various interesting subjects, which were freely discussed and questioned by all present. A vote of thanks was accorded Mr. Reid for his valuable information.

The next meeting of the Club is May 16th.

For further information apply to Mr. T. V. Gow, Dudley St., Lidcombe, Hon. Secretary.

ILLAWARRA RADIO CLUB.

The 22nd meeting of the Illawarra Radio Club was held on 8th inst. with a good attendance. After routine business (including election of another new member) was disposed of, Mr. Hewett speaking on Radio Association matters, said that another meeting of the Association would be held the following evening at which the long deferred matter of election of officers would take place.

Mr. Hewett then delivered a very edifying lecture on "Circuits." Beginning with the simple forms of crystal detector circuits, he showed with what little alteration these could be converted for the use of a valve. Getting on to valve circuits the lecturer gave on the board a great variety of circuits of all kinds, including stages of amplification. The properties and uses, advantages and disadvantages of each particular hook-up were clearly described, and the uses of various forms of coils in the different circuits and relative results obtained was explained in detail. The important factor of "coupling" in tuning was also fully dealt with, and in a very interesting manner. The lecturer's practical knowledge of all these matters from long experimental experience enabled him to deal with the subject very thoroughly and lucidly and resulted in a great deal of valuable information being gained by members. The address was much appreciated and Mr Hewett was accorded a vote of thanks.

The remainder of the evening was devoted to questions, and discussion on current topics, including the Trans-Pacific tests, Hon. Radio Inspectors, amateur transmissions, wave-lengths, etc., at which all enthusiastically joined.

On Thursday, 10th inst., members attended the All-Clubs' Meeting held at the Education Building under the auspices of the Wireless Institute, when a lecture was given by Mr. A. B. Hector, on the "Co-relation of the various forms of Energy," and a most interesting and altogether enjoyable evening was spent. Our acknowledgements are due to the Institute and to Mr. Hector for this very entertaining event; we would like to hear more of Mr. Hector, and would certainly like to see much more of this get-together spirit among clubs, in which respect the Institute has taken a lead which other bodies would do well to follow, as the good which will result from the occasional bringing together of clubs and experimenters in this way is very potential, and will do much for the cause of the amateur.

The next meeting of the club will be held at the club-room, 75 Montgomery Street, Kogarah, on Tuesday, 22nd May, at 8 p.m., when a good lecture is expected. All interested are cordially invited to attend.

The club is ready at all times to welcome new members, and any radio enthusiasts or experimenters not already members are invited to communicate with the Secretary, Mr W. D. Graham, 44 Cameron St., Rockdale, who will be pleased to furnish any information concerning the club.

ALL CLUBS NIGHT.

Wireless Institute of Australia.

170 experimenters attended the lecture by Mr. Hector, manager of Burroughs, Wellcome, at the Wireless Institute meeting on the 10th inst. The Institute is to be congratulated on having held one of the largest gatherings of experimenters yet held in Australia. A flashlight taken by Wireless Weekly's photographer appears on page 2. Mounted prints of this photograph may be had from Wireless Weekly at 3/- each.

A detailed report of the meeting will appear in next issue.

DON'TS FOR THE WIRELESS AMATEUR

A few "Cautions" for Novitiates.

Don't forget to include the lead-in as a part of the whole aerial when designing your aerial within the prescribed limits.

Don't forget that it is more efficient to have a larger aerial and a less number of tuning instruments, than it is to have a smaller aerial and a large number of tuning instruments.

Don't erect the aerial close to telephone wires as their presence is detrimental to efficient reception.

Don't forget to keep the insulation dry where the aerial lead-in enters the house. Water acts as a conductor.

Don't forget to earth on mains side of the water pipe. A direct earth is then obtained.

Don't forget to connect the aerial direct to earth when the set is not in use; lightning may ruin it.

Don't forget to remove the valve before carrying out any repairs, as a sudden jar may break the filament.

Don't forget to disconnect the high-tension battery leads or the ordinary battery leads in the case of a crystal detector, when receiving is finished.

Don't leave the high-tension battery leads near the filament leads when they are disconnected, as contact will result in the burning out of the valve.

Don't forget to keep the high-tension battery well ventilated, or it will soon deteriorate.

Don't drop the telephones. Nothing is more injurious to them than a mechanical shock.

Don't forget to hang the telephones up on a hook so that the moisture can run off the diaphrams. Rust impairs their efficiency.

Don't forget to place the accumulators on a piece of board. Sulphuric acid spoils a carpet.

Don't run the accumulators down to the bare minimum. Regular charging keeps them in good condition.

Don't varnish or paint any part of the set. Either acts as insulation.

Don't jump up suddenly when you hear telephony, and forget you have the telephones on. A sudden jerk will upset all the adjustments.

Don't forget to run over all the connections before receiving, as an out-of-sight disconnection may ruin an evening's entertainment.

Amateur Calls

New South Wales

Call Sign.	Name.	Address.
2 Q C	Hungerford, R. B.	15 Park Lane Mansions, Rushcutters' Bay. R.
2 Q D	Edwards, E. L.	52 Livingstone Rd., Petersham. R.
2 Q E	Hopkins, W. A.	R.5 Herbert St., Newtown. R.
2 Q F	Bowden, N. J.	C/r. The Grove and Awaba St., Mosman. R.
2 Q G	Hale, A. G.	Fourth Avenue, Willoughby. R.
2 Q H	Leach, R.	33 Station Rd., Auburn. R.
2 Q I	Alderson, A. B.	79 Raglan St., Mosman. R.
2 Q J	Crouch, E. C.	62 Prince St., Mosman. R.
2 Q K	Kennedy, J. A.	R.45 Woodward Ave., Strathfield. R.
2 Q L	Clarke, W. H.	"Osmond," Canary Rd., Lakemba. R.
2 Q M	Edwards, R. W.	Arcadia St., Coogee. R.
2 Q N	Ellis, R. G.	40 Park Rd., Marrickville. R.
2 Q O	Rouse, F. G.	Brook Street, Coogee. R.
2 Q P	Campbell, A. H.	Gardyne St., Waverley. R.
2 Q Q	Curtis, A. M.	Bligh St., Northbridge. R.
2 Q R	Leggo, G. E.	Fitzroy St., Abbotsford Point. R.
2 Q S	Newson, F. C. O.	Dryden St., Campsie. R.
2 Q T	Mutton, A. H.	31 Stafford St., Stanmore. R.
2 Q U	Jacob, A. F.	Homebush Rd., Homebush. R.
2 Q V	Inman, C. A. J.	"Yellow Sands," Wamberal. R.
2 Q W	Scott, J. L.	129 Macquarie St., Sydney. R.
2 Q X	Thomas, H. G.	Deboos St., Temora. R.
2 Q Y	Williams, E. A.	Crown Street, Wollongong. R.
2 Q Z	Atkins, E.	Paris House, Brisbane St., Dubbo. R.
2 R A	Vickery, K. J.	Milbridge St., Hurlstone Park. R.
2 R B	Woodham, H. E.	Merriwa St., Boggabilla. R.
2 R C	Featherstone, I. P.	MacPherson St., Waverley. R.
2 R D	McWilliams, C. R.	"Matoppo," Turrawan. R.
2 R E	Flindt, J.	37 Constitution Rd., Dulwich Hill. R.

2 R F	Flowers, W. A.	119 Perouse Rd., Randwick. R.
2 R G	McGilvery, H. D.	Murray St., Cooma. R.
2 R H	Middleton, J. T.	11 Thompson St., Mosman. R.
2 R I	Mead, H.	5 Belmore St., Burwood. R.
2 R J	McKenzie, C. R.	King's Rd., Watson's Bay. R.
2 R K	Robson, B. J.	Coal Cliff Colliery, Clifton. R.
2 R L	Rae, J. D.	83 Victoria St., Adamstown. R.
2 R M	Robertson, D.	C/o G. Robertson, Mayfield St., Cessnock. R.
2 R N	Robinson, J. W.	"Miland," Edward St., Concord. R.
2 R O	Randall, T.	Marion St., Bankstown. R.
2 R P	Forsyth, H. A.	97 Canterbury Rd., Petersham. R.
2 R Q	Cantrill, T. K.	70 Wells St., Annandale. R.
2 R R	Graham, W. P.	44 Cameron St., Rockdale. R.
2 R S	Sydney Grammar School (A. T. Keeble)	College St., Sydney. R.
2 U D	Toyer, N.	"Girrahween," Blakesby Street, Chatswood. R.
2 U E	Toohey, W. P.	90 Glebe Road, Glebe. R.
2 U F	Stewart, P. J. B.	62 Arthur Street, Enfield. R.
2 U G	Robinson, F. J.	20 North Street, Leichhardt. R.
2 U H	Roberts, J. H.	51 The Avenue, Strathfield. R.
2 K M	Henderson, R. A.	C/o Queen Victoria Sanatorium, Wentworth Falls.

The undermentioned have been cancelled:—

Call Sign.	Name.
2 F C	Chappell, H. H.
2 E N	Robinson, J. W.
2 E T	White, R. A.
2 E X	Wilshire, R. R.
2 E L	Bevan, F. G.
2 D B	Deer, G. R. B.
2 D M	Wilson, J. F.
2 D W	Ladd, T. J.
2 D C	Lee, E.
2 D Y	Skinner, J. L.
2 B U	Rodwell, J. W.
2 C E	Peele, W. J.

The Following have removed to the addresses indicated:—

2 C T	Allworth, W. M.	Yamba Street, Yamba.
2 K J	Wiatt, J. P.	18 Shirley Road, Wollstonecraft.

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It is hoped that the readers of the above will not consider it in the light of undue criticism. It is not written in any spirit of censure or complaint, but remember that the form of applications for an experimental license has a space for entering the "nature of the experiments it is desired to carry out," so that it is up to experimenters to earn their right to the name.

The distance covered by a transmitter is a function of the power used the height and efficiency of the aerial and its geographical position, and is also dependent upon somewhat similar constants for the receiver. This being the case, what is the use of any experimenter continually chasing new records as to the distance covered by his transmitter? The principal factors controlling it are quite outside his control.

At a meeting of a certain scientific institution of which the author has the honour of being a member, the late William Duddell—who was one of England's foremost scientists—ten years ago, said that in his opinion we were wrong to devote our time to the development of more sensitive receivers it would be better, he suggested, to concentrate on the production of more efficient and more powerful transmitters

The power permitted under the regulations is extremely small. 10 watts in the anode circuit means using the usual 5 watt tubes which have an efficiency of 30 to 40 per cent., only 3 or 4 watts available for radiation and high frequency losses. 25 watts, using 10 watt tubes means about 10 to 12 watts high frequency, and attention paid to the concentration of this into a very narrow wave length band and into radiation instead of resistance and dielectric losses will be well repaid

Loop reception offers an interesting field. In the course of certain work carried out by the author he found that the transmission by an experimenter over 10 miles away was being picked up on a coil 2½ inches in diameter, and was interfering with his work Transmission from V.I.S. under the same conditions was distinctly visible on a galvanometer.

AERIALS IN THE ARCTIC ZONE.

For the purpose of keeping officials in close touch with one another, plans for a chain of radio stations in the Arctic circle are under weigh in Canada. To be operated by the Dominion Government these stations will be erected at Forts Smith, Resolution, Simpson, Norman, McPherson (all on the McKenzie River), and also a sixth in Dawson City.

QUESTIONS

Accompanied by the coupon below will receive a prompt reply. Please understand that 2 questions only can be answered with each coupon.—Editor.

Question Coupon

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