



INDUCTANCES. CONSTRUCTION HINTS.

Mr. Ham, a member of the Trans-Pacific Test Committee, of the Victorian Branch of the Wireless Institute, gave the following lecture on the construction of inductances at a recent meeting:—

In the construction of inductances to tune wireless oscillations arriving on the aerial, avoid high frequency resistances. At 200 metres the frequency is $1\frac{1}{2}$ million per second. This must not be resisted, or at least as little as possible.

Copper wire, of course, must be used; silver wire is better, but too expensive. Soft drawn copper is equal to the best. High frequency oscillations travel only on the surface of the wire, so wire with plenty of surface must be used. Litzendraht wire, consisting of a number of very fine copper wires under the one cover is very efficient, having very little resistance. This can be made with six or eight No. 36 gauge wire wound round the inductance; this will be equal to the Litzendraht. The next best is soft drawn, large gauge, single copper wire, not less than 24 gauge. For the primary 18 or 26 gauge, and for the secondary 24 is suitable.

Another source of loss in 200 metre signals is the "dead end" loss, or idle turns of wire on the inductance, which absorb energy and weaken the signals. Another source is capacity in coils. This capacity effect in coils is caused by winding the turns too close together. This can be overcome by winding in steps.

Wind the inductance on a tube of ebonite with grooves, the winding being put in the grooves. Or, with ordinary sewing cotton between the turns.

This cuts down the capacity effect in the coil. Make the space between the turns about half the diameter of the wire. Another method is to use the spider web. The honeycomb will also have the same effect; but if any of you have the old loose coupler, dig it out, it is equal to, or more efficient than

disc laterals, honeycombs, etc., providing there are no dead ends.

The Technical Committee made some experiments with the loose coupler and the honeycomb on 600 metres. The loose coupler was far superior to the De-Forest honeycomb, the signal strength being 50 per cent, louder. For long waves, of course the honeycomb or concentrated coil is the best.

Another source of loss in the coils is the connection sliders, as well as the taps. All connexions should be soldered and all sharp turns avoided.

Use the induction with the condenser around it at zero equal to wave length you wish to receive, and do all tuning on the condenser. In winding any coil, immerse it in beeswax or insulating shellac. Cotton and silk absorb moisture, and this will prevent leakage. A single layer on a three-inch tube, spaced turns, would need about 35 turns. If spaced wider apart, more; if closer together about 50 turns.

The spider's web would have about 35 turns. For De Forest 25 turns on a two-inch tube one inch thick. The ideal inductance for waves of 180 to 1000 metres would be a single layer coil of Litzendraht wire, wound in grooves on an ebonite tube, lightly shellaced, with no more turns than necessary to do the tuning. In winding the spider web the slots must be odd in number.

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N.S.W. ASSOCIATION FORMED.

The series of meetings of the various radio clubs' delegates has at last culminated in the definite formation of one Governing Body.

On Thursday night last it was decided that the offer of the Wireless Institute of Australia (N.S.W. Division) to Transfer the Control of the Institute to that of the combined clubs, with certain provisions could not be accepted. An endeavour was made to have the offer held over until the Central Council got into swing, but the Institute Council could not, according to the Articles of Association, constitutionally do so. The delegates then decided to proceed with the definite formation of the Central Body, and the following was adopted:—

"That the Radio Association of Australia be now formed, to consist of a branch in each State Capital, with sub-branches in suburbs and country centres.

The ultimate idea is to have a Federal Executive and Council, State Branch controlling each State, with a Federal Congress when the position will allow. Each Branch will be the supreme governing body in State in policy matters generally, but the individual and domestic administration of each club will be in the hands of the members of that club, constituting a Sub-Branch.

Country sub-branches will be allowed proxy delegates to the State Council which will probably meet once monthly or quarterly as will be decided upon at the next meeting, and an executive will carry on in between time. Some of the proposed objects of this Radio Association of Australia are:—

To co-ordinate the efforts of the various radio clubs, institutes and societies in respect to all matters appertaining to the development of radio communication in all its branches throughout Australia.

To safeguard the interest of amateurs and experimenters at all times, and take such steps as are deemed necessary by the Council.

To assist the radio authorities in every direction.

The Association has elected Mr. Hewitt as president, Mr. Atkinson as treasurer, and Mr. O. F. Mingay as secretary. All these positions are held pending finalisation at the next meeting of the Council.

A constitutional sub-committee has been appointed, consisting of Messrs. Best and Marsden, in addition to the three officers mentioned above. This committee will draft a constitution for presentation and approval at the next Council Meeting.

The executive officers were instructed to immediately notify the authorities and commence activities.

The secretary can be communicated with at Box 734, G.P.O., Sydney.

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ANOTHER HONEYCOMB.

Honeycomb, or lateral wound, tuning coils, have been found to be very efficient in all wave lengths above 450 meters and to give results on broadcasting waves equal to those obtained from the ordinary loose coupler or double slide tuner. The common types of tuning devices are limited in their range, but the station equipped to use honeycomb coils can pick up messages from 200 meters to 20,000 meters merely by the substitution of proper coils in the coil mounting (writes H. L. Gray, in "Popular Science Monthly.")

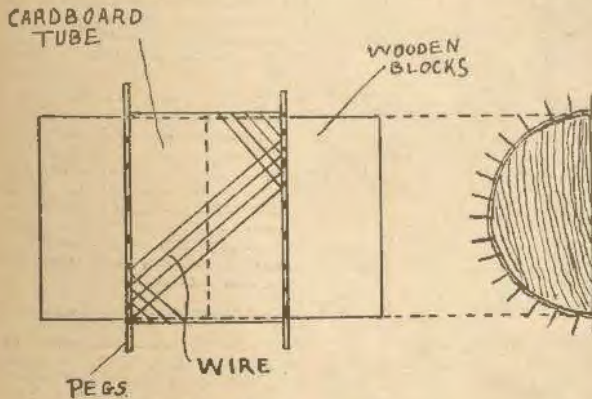
After the tube had been slid over the block, I drilled a series of small holes, 1/4 in. apart, completely around the edge of the tube on both edges. Into these holes pegs or brads were driven, leaving them projecting about 1/4 in. The spacing of the pegs I found to be the same on all coils whatever their wave length, but the thickness of the winding varies with the amount of winding applied.

In winding the coil I attached the end of the wire to one peg taken at random, counted off the

coil, was 155 ft. of No. 24 wire. The exact amount of wire needed, I found, depended on the aerial, the capacity of the condensers used, and the other tuning devices, and the figures given above are approximate.

After the coil had been completed, it was well coated with the best quality of white shellac obtainable, I discovered it was better to leave the coil uncoated rather than use an inferior grade of shellac.

The coil described may be simply and cheaply mounted with the mountings given in the first issue of the "Wireless Weekly."



In winding my own coils I found that the size of wire makes little difference except as to the space taken up. Numbers 22, 24, or 26 wire will give equal results as far as an amateur can perceive. My coils for receiving broadcasts at 350 metres were made as follows:

I secured a wooden block that could be fitted tightly inside a pasteboard tube 2in. in diameter. The pasteboard tube was cut to a width of 1in.

eight peg on the opposite side and carried the wire to that point. Then I counted off eight more on the starting side, led the wire to that, and so on. The pattern for each coil was arranged so that after each revolution of the winding the wire appeared at the peg just before the one used to start the preceding round. This form of winding was continued layer upon layer until the desired length had been applied, which, in the case of the broadcasting

C.W. is sometimes heard on crystal without any special apparatus, as the Tikker etc., being used. This is due to two C.W. stations, which are tuned to slightly different wave-lengths, being received at the same time. A "beat" note, which is caused by the interference of the two sets of waves, is heard but is lost when one of the stations alters its wave-lengths or stops radiating.

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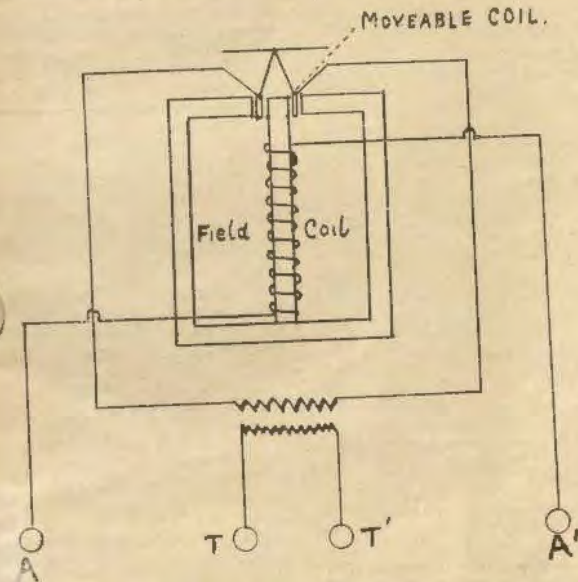
Everybody is interested in the possibilities of the loud speaker as applied to the ordinary valve receiving set.

The loud speaker of the electro dynamic type stands alone, inasmuch as the principle on which it works is altogether different from that of the ordinary telephone type. We do not propose to go into the scientific theory of it, but to give a brief description of its working characteristics.

way directly concerned with the magnetic flux.

A small moveable coil is placed in a circular air gap between the poles of a very powerful electro magnet, and this coil is attached to the diaphragm.

The magnetic flux across the air gap is constant and the current is sent through the small moveable coil. Whenever a current flows through the coil it is either attracted or repelled ac-



In the telephone type of loud speaker, its sphere is limited, whereas the electro dynamic speaker is not. The ordinary telephone type of loud speaker will give forth sound proportionate to their input only up to a certain point and then the diaphragm will hit the pole pieces.

In the loud speaker described here, the principle is electro dynamic, and the diaphragm is in no

accordance to the direction of flow through the little coil, and the motion is thereupon transmitted to the diaphragm.

There are no pole pieces to interfere with the motion which may be as great as the elastic limit of the diaphragm.

This loud speaker will, then, give off enormous sound volume without limit, except for input.

There are several interesting

WHO CAN TELL?

There is no reason, a London journal says, why the village, the remotest farm house, the coast-guard station, the lonely light-house, the isolated dwellers on islands, should not receive by radio, not once in a way, but every evening, as good singing, as good opera, as good dance music, as good a lecture as any wealthy man in London can buy. There is no reason either why the tedium of long railway journeys or sea voyages should not be alleviated by radio-telephony entertainments.

And shall we go any more to hear public speakers, the journal asks, or will they address their audiences from their own houses, talking into a transmitter and reaching the four corners of the land? This new wonder is at present only in its infancy. What may be expected of it by the time it reaches adolescence? It gives promise of quick development. What are the limits of its growth?

No one can say, or even guess. It seems destined in a hundred different and important ways to play a part in the affairs of men.

In England there was a great deal of discussion over the problem of who was to broadcast and what was to be broadcast. Advertising schemes were ruled out right at once, and it was decided that broadcasting should be confined to music and songs, spoken entertainment, dance music, lectures, sermons, and such like popular matter.

phenomena connected with this type of loud speaker. A weight of 10 lbs. may be placed directly on the diaphragm, and it will still vibrate. No vibration of electro magnetic types can support such a weight, for only 4 ounces will stop any of them.

In the above diagram, A and A' are connected through a Rheostat to a 6-volt accumulator, while T, T' are connected in the ordinary way to the receiving set.

The transformer in the diagram is a step down coming from the output of the receiving set. For the magnification of radio signals, this type of loud speaker

October 13th, 1922

WIRELESS WEEKLY

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Our
Radio
Yarn

THE AERIAL.

By
Q R.M.

There are many ways of celebrating a birthday, but the most unique method I have heard of was adopted by Tom Bloggins.

It happened that his birthday was on the same date as that of his ten-year-old son. For weeks the discussion had centred round that annual problem in the Bloggins household: "What shall we get the lad for a present?" Young Tom eventually found the solution, and plumped for a wireless set.

The great day fell on a Saturday, and at midday Pa Bloggins entered the suburban home with a nice little crystal set under his arm, and a parcel containing a coil of wire and the necessary insulators, etc.

Mrs. Bloggins regarded the purchase with suspicion. "I thought you said it was wireless," she said, "but you have got enough wire there to fence a dozen paddocks."

Father smiled in a superior sort of way. He had received a little lecture from the man in the shop, and rather fancied himself as an exponent of the science. "My dear," he said, "the electro-magnetic waves have to be intercepted from the ether, and the simple in-ter-tenna system, which I shall erect, will perform this function."

"And young Tom's not going lady," and young Tom's not going lady, "and young Tom's not going to play with it, not if he has a hundred birthdays."

"The ether in this case," explained Mr. Bloggins, "is the air."

"Well, I haven't heard it called that before," sniffed the wife.

Dinner over, young Tom and his father adjourned to the garden to put up the aerial. "Pity we haven't got a flagpole," said the lad, but father did not seem to sense any difficulty. "We'll just hook the hoisting blocks to those two trees," he said, and marched off to the back of the house to get the ladder.

Now I venture to say that had Bloggins left the aerial to young Tom, all would have been well, but, Dad rather fancied himself at

fixing things. No doubt he was good in his younger days, but when a man gets past the prime of life, and his manly chest sags downward a point or two, he is seen to advantage in an armchair with a cigar and a glass.

Dad trotted back to the foot of the tree, and the ladder he dragged behind him was the one he had used when he nailed the name "Cosy Nook" above the front door, when he was on his honeymoon. "Let me go up," suggested young Tom, but Dad would not hear of it. "I'll go up," he said, "you hold the ladder."

With a determined look and a coil of rope and a pulley, Bloggins began the ascent. The ladder creaked and groaned, but young Tom, in peril of his life, held gamely to the bottom rungs. Then Dad stood on a defective rung. Before he could shift there was a crackling of wood and he realised forcibly that there was a law of gravity.

Like Newton's apple, Dad dropped earthward and lay gasping at the foot of the tree.

"Confound it," he shouted at Tom, who had got from under only just in time, why didn't you hold the ladder still. I might have broken my neck." But Tom accepted the censure, he knew his father.

"Let me climb the tree," he suggested, but Bloggins, who scorned to admit defeat, thought otherwise. "I shall climb it myself," he said firmly.

The tree was a young gum, with its first branch about 10 feet up, and to this vantage point Dad made a perilous way over the sound portion of the ladder.

Then his troubles commenced. Clinging to the smooth trunk like a native bear, and puffing like a Grampus, he sought to get higher. The strain was terrific, and his trouser buttons were the first to succumb to it.

There is no doubt that trousers converted into an impromptu hobble

hamper a gentleman in aboreal athletics, but Bloggins was determined, and like the youth in "Excelsior," he struggled on. Mistortunes never come singly. The second one took the form of a bull ant, bound, apparently, for the same high altitude as Dad. They say blue gum trees are so called from the blue haze that hangs over them. I can bear this out. The blue over this particular tree, when that ant made contact, would have kept a laundry going for a year.

However, Bloggins reached the next branch and doctored for repairs, so to speak. He adjusted his nether garments with difficulty, and then found that he had shut the bull ant inside.

The ensuing hunt was both picturesque and thrilling, and only culminated when young Jones next door arrived with the request from his father - that Mister Bloggins would change his clothes indoors, as "we have visitors."

Anyhow, the ant had apparently been routed, and Dad started a further climb. This time luck was with him, and he reached the desired altitude in safety.

It was then that the real fun started, for Dad had forgotten to take up the rope and pulley!

He was still going strong, and had not said the same word twice when he reached the ground five minutes later minus the skin of his shirt and that of one hand.

"I am deeply grieved," he told young Tom, with all the dignity he could muster, "to have to reprove you on your birthday, but the manner in which you have set out to hinder and annoy me this afternoon leaves me no choice. You are a very bad boy, and I shall do nothing more with your wireless."

That night, when the moon bathed the garden with silver radiance young Tom whistled up his "cobbers," and had Dad been well enough he would have seen an efficient aerial rigged in ten minutes.

NATURAL AERIAL.

Why not use Trees.

Why bother with aerials or loops when there are plenty of trees about?

In erecting aerials we are taught not to get too near trees, tall buildings and such, otherwise our signals will not be at all up to strength. When one considers why this is so, the thought will probably occur, "If these trees absorb the high frequency waves, why can't we attach a radio receiving set to them and detect the waves in the same way as the aerial would enable us to do?"

It is a fact that this can be done, and has been proved to work thoroughly with a multi-valve set. General George Squires, chief signal officer, American Military Forces, pursued this idea during the war, with the result that it is a recognised practice under certain conditions.

To those who had anything to do with wireless in the A.I.F.

will appreciate the value of this device (with exception of such places and circumstances as Pozieres, etc).

In experimenting along these lines, the following is the suggested course of action:—

Select a good tree from 40 to 50 feet high. It must be a live tree. Then drive a 3½ or 4 inch nail not lower than a quarter of the total length from the top of the tree. Better results might be obtained by going even further up. Around this nail fasten the wire to connect to the antennae terminal of your set.

A ground connection is still necessary. Signals of fair strength can certainly be heard by even driving a spike or rod into the ground, but for good strong signals a counterpoise earth would probably be much better, and may be constructed by laying out a circle about three or four feet out from and around the tree. Dig a trench about a foot deep around the circle line, then lay a bare copper wire of about No. 14 to 18

gauge in this trench, and connect several radiating wires about 10 feet in length, sunk in ditches 1 ft. deep to it.

A soldered connection from the circle of wire is made, and then connected to the earth terminal of the receiving set.

One will not expect as loud a signal from this kind of aerial, as from one properly constructed of copper wire. But it all depends on the efficient connections made, and above all the efficiency of the set and the operator.

In America this idea has worked O.K. up to 50 miles from the broadcasting stations with a valve set, but no data is available as to its ability to energise a crystal set. The experimenter has certainly quite a useful field here for some good work.

In order to prove that it was not the down lead from the wire that intercepted the radio wave, the wire was taken off the nail and a button insulator attached to the tree by the nail. The wire was then twisted around the insulator, but no results.

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WIRELESS WEEKLY

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TRANS-PACIFIC TESTS.

Getting Ready.

The work of arranging for the test between Australian and Californian amateurs is proceeding apace.

The organisers are of the opinion that the biggest factor will be to keep it before those interested and prevent it dying a premature death.

At a meeting of the W.I.A., Victorian Division, at 422 Little Collins Street, recently, the Technical Committee of the Trans-Pacific Radio Test gave very helpful information on the apparatus to be used and the methods of using it. Mr. H. K. Love first reported the result of correspondence and the progress of the committee's work.

Mr. Newman then lectured on aerials suitable for the test; Mr. C. Hiam on tuners, and Mr. R. Hull on amplification of received signals.

It is no recommendation of an amplifying arrangement to say that it gives signals which can be read in the next room. Such a result only means deterioration of telephone receivers and waste of battery power. An amplifier is an arrangement which will strengthen up weak or inaudible signals so that they can be read comfortably.

RADIO AND THE GOSPEL.

Christ Church, McDermott Road, Peckham (England) claims the "first wireless sermon heard in London." The congregation "listened-in" recently to a sermon preached at Blackheath, several miles away.

Clothes-props were used to construct a temporary aerial on the roof of the church. Dr. J. Boon, president of the Peckham Christian Union, preached at the Burdette Aerial Works, Blackheath, using a microphone, and the sermon was heard by "listeners-in" within a radius of 100 miles.

A three-valve receiving set was placed on a table in front of the pulpit rails at Christ Church, and the words were heard with remarkable clearness all over the building. The church was filled to overflowing.

"Wireless," said Dr. Boon in an interview, "commands a wide field in which to spread religion, and although it has yet to be perfected, I am convinced that it will prove a valuable means of bringing the gospel to the homes of the people."

In crystal work particularly, solder connections wherever possible.

Joe: "My transmitter is a bit out of sorts!"
Jim: "Try a tonic train!"

HETERODYNE EFFECT.

Tune your set to the vicinity of 9,000 metres some night between 7.30 and 8 p.m. During this time, you will get Panama time signals, Darlen (NBA), and at same time San Diego. (NPL) press, besides other stations. Guam (NPN) will be nosing about a good deal during this period, and frequently keeps his note sustained, when, if you reduce filament current till set stops oscillating, or put your regenerative coil out of action, you will get NPL, distinctly heterodyned by NPN.

About this time also, another arc station frequently starts working, and will heterodyne NPN, who can easily be read, using one valve. I expected a similar effect with NPO and JAA, but results were not satisfactory. Try it!—L.R.H.

AMATEURS!

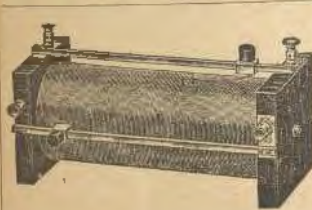
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HOW IT WORKS

VARIABLE CONDENSER

A variable condenser is a device by which a continuous variation of capacity may be obtained. The term is not usually applied to a condenser which is variable in steps.

The capacity of a condenser depends, among other things, upon the effective area of the plates of which it is composed, and upon the distance separating the plates. In the usual form of variable condenser, the plates are made in semicircular form, one set being mounted on a spindle capable of being rotated, and moving between the plates of the other set, which are fixed. The effective area of the plates, and consequently the capacity of the condenser, depends upon the amount one set of plates overlaps the other, and this is controlled by rotating the spindle.

The wave length to which a circuit responds varies as the square root of the capacity in the circuit. A variable condenser, therefore, gives a smooth and convenient means of tuning, as with its aid the inductance of the tuning coil may be varied in considerable steps, no longer necessitating elaborate switching devices.

Another form of variable condenser is that in which the effective area of the plates remains constant, while the capacity is altered by varying the distance between them. This variation of spacing is obtained by the use of a threaded spindle, along which one of the plates moves, or by a cam which forces the plates apart against the pressure of a spring. This type is not very popular, and consequently is rarely used.

When soldering a wire to a water pipe for an earth connection, first shut off the water and empty the pipe. Soldering is now an easy matter. If this is not done, the water in the pipe stops it from becoming heated, and so prevents the solder adhering properly.



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ILLAWARRA CLUB.

The last meeting of the Illawarra Radio Club was held at its new room (Mr. McNeill's residence) 33 Montgomery St., Kogarah, on Friday, after formal business had been disposed of, the members entered upon a general discussion as to the Club's present position, its proposed future activities, and means of augmenting the Club's funds.

Having secured a permanent place of meeting it is proposed as soon as practicable to apply for a licence and have a set working in the Club room.

The next meeting will be held at the above address on October 18th, when a lecture on "Elementary Valve Work" will be given by Mr. Hewett. All members are asked to attend.

WESTERN SUBURBS.

The last meeting of the Western Suburbs was held at the Club Room, Auburn, when further arrangements were made for its Club Social and Dance.

Members are working hard on a transmitting set for the club, and this will be completed shortly.

Mr. R. S. Burman lectured on Elementary Principles of Crystal Reception, which proved of great interest to the younger members.

Lectures for the next meeting on October 18th will be "Aerials and Earths," by Mr. E. Wood; and "Valve Reception," by Mr. Elliott.

Waverley Amateur Radio Club.

The club is at present re-drafting its rules and regulations. This has been found necessary, as the rapid growth of the club recently has rendered the standing regulations inadequate.

A provisional balance-sheet referring to the dance was presented by the treasurer, which showed a profit to date of over £5.

The club's aerial is now complete, and should give a maximum of efficiency. With the set practically finished, the club should soon be able to begin its transmission. A request has been received from Melbourne, that the club assist in sending calibration signals for the impending Trans-Pacific tests. If the necessary permission for the wave length required is obtained from the authorities, the club will do its best in the matter.

WORK IN QUEENSLAND

Mr. L. O. Kelvin, secretary of the Wireless Institute of Australia, Queensland Division, writes under the date of October 1st:—

The Institute owns its own transmitting and receiving sets, and has a radiophone with a range of 500 miles. Experiments in radio-telephony were first conducted by the late secretary (Mr. S. Colville) with a little success. Later, two of the Council Members made a radiophone. The success was great. Ships reported hearing the music over ranges up

to and over 500 miles from Brisbane.

The Institute recently constructed its own set, Mr. J. Milner being responsible for the lion's share. The results with this set far exceed anything previously attempted. Commercial stations report that the voice modulation is 100 per cent, better than the music broadcasted by either Sydney or Melbourne Stations. So, you see, we are keeping well up with the times.

Last Friday evening a demonstration was given in the Institute's rooms before an audience of over 150 people. The radiophone was kept working on the roof whilst an aerial was erected in the lower lecture room, some three floors lower. The music was perfect in every detail. After the demonstration the audience was given an opportunity of inspecting the transmitting set.

The Council would be pleased to hear from any N.S.W. member as to his success in hearing our concerts, which are broadcasted every Tuesday evening from 8 p.m. to 10 p.m. on a wave length of 850 metres.

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**Large Stocks of Crystals
Headphones, Condenser
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STATION CALLS.

SHIPS STATIONS. GREAT BRITAIN

Ibex, MSC; Ibiuhy, GFJK; Idaho, GJJ; Ida Yeick, GCVP; Iddesleigh, ELF; Idomeneus, GZY; Ikala, ZUT; Ilford, YKL; Inuan, ZDO; Imenau, GBYN; Imber, YFD; Inca, MIF; Imperator, GBZW; Ina Blumenthal, GDFN; Incomore, GDVP; Inchmead, YIJ; Indian, MHB; Indian City, GDPC; Indianapolis, ODF; Indian Transport, ZDR; Indore, GMI; Ingleby, MXI; Ingomar, GDV; Inishboffin, LSN; Inkula, ODG; Inkum, GDZF; Innerton, YFN; Inston, GFJM; Intaba, MIP; Intombi, ZLL; Inventor, MVY; Inverarder, GBVW; Inverawe, ZTD; Inveresk, BOU; Inveric, EPY; Inverleith, GDVK; Inverness, EIU; Invicta, GUL; Ionic, MWI; Iris, MNI; IonfeSTAR, ZXP; Irishman, GJK; Irish Monarch, YGR; Irismere, OCD; Irmgard, GBJD; Iroquois, MEI; Isis, GBMY; Islandia, XJN; Italia, MAR; Ismaila, GCQD; Ismailia, ZYH; Italian Prince, ZGK; Itaura, GCQF; Itola, GCQJ; Ivanhoe, XEP; Ixion, GRZ; Izmir, GBVN.

Jabiru, LTB; Jacobus, GCWL; Jamaica, YSI; Janeta, ESR; Janus, GCSR; Jason, GLH; Javary, GBRQ; Jebba, YUX; J. Duncan, ZWJ; Gedmead, YMC; Jekri, BHD; Jersey City, GDRM; Jervaux Abbey, ZOW; Jeseric, OCC; Jessmore, GFJK; Jeypore, GDBY; J. L. Lassen, GCVN; Joffre, BRP; John Casewell, GDRZ; John Pender, MEF; Johnstown, BTW; Jolly Inez, EPH; Juliston, LSI; Julius Yeick, GDJY.

Junia GJL, Jura BNG, Justin YPL.

Kabinga GCPN, Kaduna ZMS, Kafir Prince ZFT, Kaikoura MRS, Kaimanawa GBVT, Kaiping YBB, Kaiser-i-Hind MSI, Kalwarra GCDY, Kaiserin Auguste Victoria GCTM, Kalimba ESQ, Kalouc GBY, Kulyan YO, Kamarima GNA, Kamenety Podolsk YBT, Kamouraska DEP, Kanawha MNL, Kandahar MAB, Kandy BLB, Kansas MRW, Kara GCNF, Kapurthala GCDT, Karagola ZNX, Karamea MSB, Karapara YST, Karmaia MTF, Karnak YKV, Karoo BDF, Karoo GNS, Kasama GBP, Kasara BLD, Kashgar YYL, Kashmir YZN, Kassala

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What do you want to know?

Every reasonable specific query in the field of general wireless addressed to the Information Department will receive a prompt reply.

Address the Information Editor "Wireless Weekly," Box 373, G.P.O., Sydney

C. O'D (St. Peters):

(1) Controller of Wireless, Prime

Minister's Dept., Melbourne.

(2) Yes.

(3) Advise use of condensers.

(See "Make Your Own," this issue).

A.W.A. (Greenfell):

Advertisers in "Wireless Weekly" about 20/-.

P. C. (Tamworth):

(See "Make Your Own," this issue).

R. R. U. (Melbourne):

(1) Yes.

(2) Parts only of a crystal are sensitive, the sensitive part may be ground away.

(3) By knowing the wave-length. A wave meter is necessary.

(4) From a spot of Paraffin wax on the point where catwhisker touches sensitive spot, and this will hold it in position.

ZYD, Kastalla OCLJ, Katanga BOZ, Katie ZRV, Katherine Park GRU, Kathiwar GCPR, Katlamba GTF, Katuna GCPM, Kazembe GYQ, Keats GFQK, Keemur ZKP, Keelung GCLT, Kelsomead YMD, Kelvinbrae MFY, Keabane Head GBRL, Kendal Castle GDLZ, Kench BTX, Kenilworth XJG, Kenilworth Castle MQF, Kenmare GFCX, Kenmare MNG, Kennebec GBXP, Kent ENI, Kenuta GJO, Kentucky GDN, Kerkyra GBWT, Kerman ZIQ, Keyingham BMO, Kevnes XFQ, Khartum YLE, Khiva MGZ, Khyber MCE, Kia Ora GJP, Kilderpore GDBX, Kildonan Castle MQK, Kincardine GDSK, Kinfauns Castle MQL, King Alexander GBZX, King Alfred GCMX, King Edward YRW, King Lear GDFR, King Orry MPE, Kingsbury YDT, Kings City LSW, Kingsmere ZRB, Kingsale XEJ, Kyoto XEY, Kirktown BRN, Kirkstall Abbey GBVC, Kirkwood EPG, Kirnwood MGX, Kittiwake GBYQ, Knebworth GDCL, Knight Companion GKS, Knight Friant GDFZ,

SALE & EXCHANGE

Three Lines (approximately 15 Words), may be inserted in this Column for 9d.

Extra Lines or part thereof, at 6d per line.

FOR SALE.—2,000 ohm. phones, detector, variable condenser, etc., 250 ft. 7/20 copper aerial, £4, or exchange, gent.'s bike, E. M. Felgate, Hill Top, S. Lane.

Knight of the Garter MSQ, Knight Templar GKT, Knockferna GCKY, Knowsley Hall YVW, Kolpino ODL, Konigin Luise GELF, Koranna GYY, Koranton GDRN, Korean Prince YRS, Kolka ODM, Kourak BTA, Koono ODN, Kura XJJ, Kra-noiarsk XUC, Kronenfels GBCD, Kumara YWT, Kumeric GJQ, Kurdistan GRJ, Kurmark EKY, Kurow GDZS, Kut YLF, Kut Sang GPKW, Kwai Sang GCSN, Kwara ZMT.

Lab'cum LUP, Lackawanna GJV, Lackenby BTR, Lady Assaley EES, Lady Brassey GQR, Lady Carlow GFCM, Lady Cloe BDN, Lady Denison Pender GDQJ, Lady Duncannon GCTQ, Lady Kerry GFBR, Lady Killiney GBLK, Lady Kirk YGU, Lady Rhondda XIA, Lady Wicklow GFBS, Lady Wimborne XFU, Lahore GDBZ, Lakonia GPW, Lalande GDQN, Lama GJN, Lamington ETF, Langley GDBR, Lancashire YHS, Lancaster Castle GCKR, Lancastrian MBE, Lancastrian Prince GFDW, Langton Hall ELS, Lanuvium YLL, Laomedon ZSZ, Laplace LUV, Lapland YYE, Largo YYO, Largo Law ZOH, Laristan YAM, Larne ZRA, Leapark GBMZ, Laurel Branch ZZG, Laureleaf EYO, Laurelpark GFMZ, Leafield GXT, Leeds City ERB, Leighton GBZV, Leicester GBCE, Leicestershire MYL, Leitrim ZBT, Lemberg GDFS, Lena MDX, Leominster BCS, Lepanto ZBA, Lesto XKG, Lestrin GCXS, Lelita GFDN.

Increasing the number of wires in an aerial does not materially alter its wave-length.

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