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SYDNEY

# THE WIRELESS WEEKLY

*A Journal Devoted to the Interests of Wireless Enthusiasts both Amateur and Professional*

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 \* A TALK WITH "WIRELESS WEEKLY." \*  
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*Where are those new Radio Regulations?*

Who is holding them up?

And why?

The wireless experimenters are being fooled by an unsympathetic Government. There are rumors in circulation, and they are ugly enough.

This journal has every reason to believe that the new Regulations are ready to be made public; have been ready for a week or so, but Ministerial assent has been withheld. Why?

Major Marr, M.P., asked the Prime Minister in the House of Representatives a couple of weeks ago, whether new Radio Regulations had been drafted, and if so when they would be made public.

The answer was that Regulations had been drafted and they would probably be issued the following week.

They have not appeared yet, and the answer must be lumped with many such other assurances as so much hot air.

But the Government has chosen the wrong time to try the feelings of the experimenters. The elections are too close.

*It is the advice of this journal, to wireless men, to work against every supporter of the present Government, at the elections, unless the Regulations are issued within the next week or so*

If they dare to treat you like this when they are out to catch votes, what would they be likely to do if

returned with a good majority, and the prospects of an uninterrupted three years ahead?

If there had been a rush of work that had prevented the drafting of the Regulations, there would be some excuse.

But it is the firm opinion of "Wireless Weekly" that they are ready.

*Why are they being held up?*

**ANTENNA.**—The system of conductors designed to radiate or to absorb electro-magnetic waves. It is also called the aerial, but this latter is used by some authors to indicate that part of the antenna which is suspended in the air.

**ANTENNA DIRECTIVE.**—An antenna having the property of radiating a maximum of energy in a certain definite direction. The loop and inverted L antennae are two of this type.

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## WHERE ARE THOSE REGULATIONS?

It is now over a fortnight since the Prime Minister promised Major Marr, M.P. in the House of Representatives in reply to a question; "That the Amended Regulations would be issued within a week." The official reason given the Radio Association of Australia was that the Government Printer could not print the new regulations, due to the pressure of Parliamentary work. We have it on very good authority that the regulations are printed and ready to be broadcasted throughout the Commonwealth. What is holding them up and what motive is at the back of such unnecessary action? There are many reasons why these regulations should be declared immediately and *not* any legitimate reason for the secrecy.

From the amateur point of view the Regulations should be declared immediately, so that the amateurs and experimenters will know

- (1) Just how much latitude they will be given.
- (2) How much knowledge they will require to pass the necessary experimenters licence examination.
- (3) To what extent they can go in respect to building a station and the expense therein.
- (4) How to frame such rules and by-laws in their respective clubs, as will enable them to "Police the Aether," and so assist the Radio Inspector in controlling the Radio Field.
- (5) Lastly, just whether it will be worth while to dabble in this very interesting branch of science.

There are very, very few licences being granted or even applied for, yet it still necessitates a Radio Staff to attend to same, whereas if the regulations are announced, there will be a great demand to secure new licences with a consequent increase in the Revenue.

The Radio Service can hardly be paying for itself and with this increased revenue there should be no drain on the resources of the Treasury.

A considerable amount of capital is waiting to be invested in the manufacture and sale of Radio Equipment and until the regulations are announced, it would be foolish to invest any capital in an unknown possibility.

Up to date a fair amount of money has been invested and further expenditure is not warranted until the future is known.

It should be the policy of the Federal Government to assist in this matter of Australian Industries, and by announcing the regulations, the best assistance would be given.

Mr. Hughes announced during last session that he would not grant a monopoly to any one firm or combine in respect to the Radio business in Australia, yet there are indications that such a monopoly is being sought.

How can the Prime Minister be a director on the Amalgamated Wireless Ltd., and yet be the Ministerial Head of the Radio Service? Can Mr. Malone, Controller of Wireless, justly administer his Dept. when all his recommendations must be placed before a director of the Wireless Co.?

Why is the Government not issuing these regulations? Has pressure been brought to bear to suppress their issue? We are authoritatively informed that such regulations will not be issued for over three months yet. Why?

Let all the amateurs and experimenters immediately write to the Federal Members, who are contesting their electorate, and asked for declaration of these amended regulations *immediately*. Unless the amateurs and experimenters take it on themselves, they will not enjoy the new privileges that is their due, in accordance with the many promises made.

They should all be alive to the situation generally and not sit down and take this medicine without objection.

The Politicians are paid by the people to administer the country and the people should have a say in the general policy. The public also should know exactly what is keeping Australia back in this matter, we are absolutely the last people to take it up but let it not drag any longer!

**HOW IT WORKS.**

**THE TUNING COIL.**

The function of a tuning coil is to allow signals of any wave length to be heard at will, and to exclude signals of any other wave length.

This result is obtained by making use of the property of self-induction, which is possessed by any coil of wire. Self-induction is the tendency of a coil to oppose any change in the current flowing through it. When the current is increasing, the changing magnetic field causes a current which opposes the original one, while when it is falling, a current is set up which tends to increase it. A measurement of this self-induction is termed the inductance of the coil.

The wave length of a coil is proportional to the square of where "L" is the inductance and "C" the capacity associated with it. In a simple tuning coil "C" is the distributed capacity of the coil, and is approximately constant. The wave length is therefore changed by varying the value of L. As the inductance depends among other things on the number of turns in the coil, this is varied by introducing more or less turns into the circuit, the most common methods of doing this being the sliding contact—found in the primary of a loose coupler—and the radial switch, used in the secondary.

Adding inductance to a circuit is analogous to lengthening a violin string, which, other things remaining the same, causes the string to vibrate more slowly, and

**FOR BROADCASTING.**

Six persons may listen in to radio concerts, simultaneously and with rubber tube ear pieces instead of the more expensive amplifiers and loud-speaking horns. A Pennsylvania (U.S.A.) man has designed a nickled-brass attachment that fits into ear apertures of two receivers and possesses six branch tubes, to which the half dozen listening contrivances are affixed—Popular Mechanics.

to give a lower note. So in a radio circuit, adding inductance makes the period of oscillation lower, and this causes the circuit to respond to a longer wave length.

**ANTENNA, RESISTANCE.**—An effective resistance which is numerically equal to the ratio of the power in the entire antenna circuit to the square of the R.M.S. current at a potential node (generally the ground). It includes the radiation resistance, the ground resistance, the radio frequency ohmic resistance of the aerial loading coils and series condensers, and the equivalent resistance due to brush discharges, eddy currents and insulator leakage.

**APERIODIC CIRCUIT.**—A circuit which has no definite frequency, this being due either to its resistance being large enough to prevent natural oscillations occurring, or to its having no capacity or inductance by which it can be tuned.

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Condenser Plates (brass or aluminium), 2d each.  
Sliders, 3-16 or ¼ inch, 2s each.  
3-inch Graduated Dials, 1s 9d.  
Ditto (with Knobs), 5s.

## ON AERIALS. For Trans-Pacific Tests.

Lecturing on aerials for the proposed trans-Pacific tests, at a recent meeting of the Victorian Division of the Wireless Institute, Mr. Newman, of the Test Committee, said:—

"The main thing is that the E.M.F. must be directly proportional to the height of the aerial. If we double the height of the aerial we double the received E.M.F., so we have twice the power to work with and to amplify before rectifying.

"Types of Aerials.—The umbrella type is gradually dying out because it is not very suitable for C.W. work. An inverted L for 250 metres would need to be supported on 60 feet poles, and be not more than 129 feet on the flat top.

If longer it would be above 300 metres, and even with a series condenser would not come down to the wave length required.

A Flat Top T Aerial would need to be about 200 feet long. The Beveridge Aerial is most suitable for short wave lengths. It is a single wire and for 250 metres would need to be not less than 400 feet long. The longer the antenna the greater the current received, but carried beyond a certain point, losses in the antenna become too great.

"That is when the energy in the antenna is the same as the energy in the ether. The wires should run in the direction in which the signals are coming, and the instruments be at the further end.

"The Beveridge is very directional when having a non-inductive resistance at the end nearest the transmitting station. This non-inductive resistance stops any reflection. The ideal conditions are when the wave velocity in the ether and the antenna are at the same rate. The tendency is for

the antenna wave to lag behind, but this can be adjusted by having a non-inductive resistance in shunt in the antenna to bring the current in the antenna to the same velocity as the ether wave.

"A single wire is not always used in the Beveridge Aerial, sometimes a series of loops are used to make up the total length of the wire."

Resistance coupled amplifiers are of greatest advantage when several stages are used, due to their great stability and freedom from self-oscillation.

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Audio Frequency Amplifier.

There comes a time when the experimenter thoroughly understood the functioning of the valve and he wishes to get better signals.

This article will deal with the necessary apparatus required. In Audio frequency, control panel is especially useful, and, in fact a necessity if the set is to be used in conjunction with a loud speaker. The material required is as follows:—

- 2 Audio-frequency transformers.
- 2 rheostats.
- 2 switches.
- 2 sets of V24 valve clips.
- 2 panel type Radiotron valve holders.
- 2 V24 valves.
- 4 switch contact studs.
- 6 terminals.
- 1 piece of Bakelite 8in. by 1/8 in.
- 2 engraved dials.
- 1lb. of No. 16 gauge bare copper wire.
- 18 assorted 1/8in. M.T.N. p. screws and nuts.
- 1 wooden cabinet.
- 1-40 volt "B" battery.

In fig. 1 will be seen the general lay-out and from practical experience it is found to be a useful all round design. Coming to the panel itself, let us discuss the several points as in its construction.

The idea of having two sets of valve holders is for convenience, also for experimenting in the functioning of different kinds of valves.

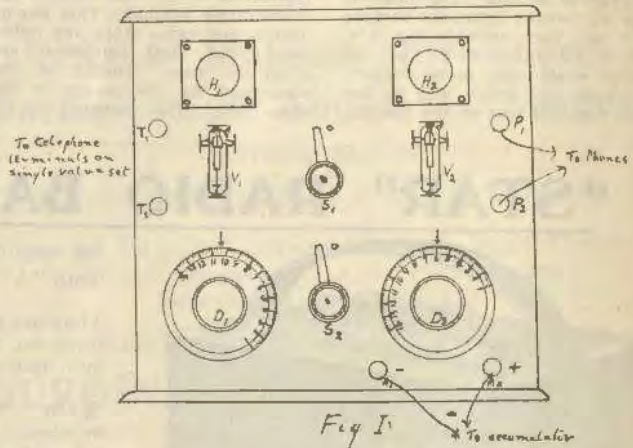
H and H2 are to enable the ex-American 4 prong type of valve.

As regards H, and H2, the flush panel type as described in a previous issue of "Wireless Weekly" are ideal. S, and S2 are the "A" and "B" battery switches respectively; D1 and D2 are the rheostat dials and though not absolutely necessary, make

wrong will throw the whole instrument out. On the transformers, as shown in fig. 2 P and S denote the primary and secondary terminals.

A word about transformers. Be very careful of the type you select. Procure transformers that are well tried, otherwise your amplifier will not be efficient.

The ratio of a transformer that gives excellent results is as follows.—Primary, 3300 turns of



the instrument look an extremely attractive piece of work.

T and T2 are connected to the telephone terminals on the single valve set. A and A2 are the terminals that go to the accumulator and their polarity are marked as in fig. 1.

P1 and P2 are the telephone terminals, and are self explanatory. Coming to fig. 2, we have a back view of the panel, showing the complete wiring, including both sets of valve holders.

In wiring the panel, be sure that you follow out the wiring diagram exactly, as one wire

44 enamelled wire; secondary 12,000 turns of 44 enamelled wire wound immediately over the primary.

MUSIC IN THE AIR

MR. MACLURCAN'S CONCERT.

SUNDAY NIGHT'S CONCERT

Mr. MacLurcan, of Strathfield, will send out his usual concert on Sunday night at 7.30. Listen for him on a wave-length 1460 metres.

The d.c. resistance of the primary is 2200 ohms as that of the secondary 9150 ohms. One cannot be too exacting in the choice of transformers, as they play such an important part in this amplifier.

When the panel is wired up, give it a test before you fit it in a cabinet and be sure that all con-

nections are screwed up tightly and that no wires that cross are likely to touch.

When the panel is finally passed, it can be let into a well-polished cabinet, and you will find that it will be a source of great interest to the user and will enable him to entertain his friends to concerts without the use of headsets.

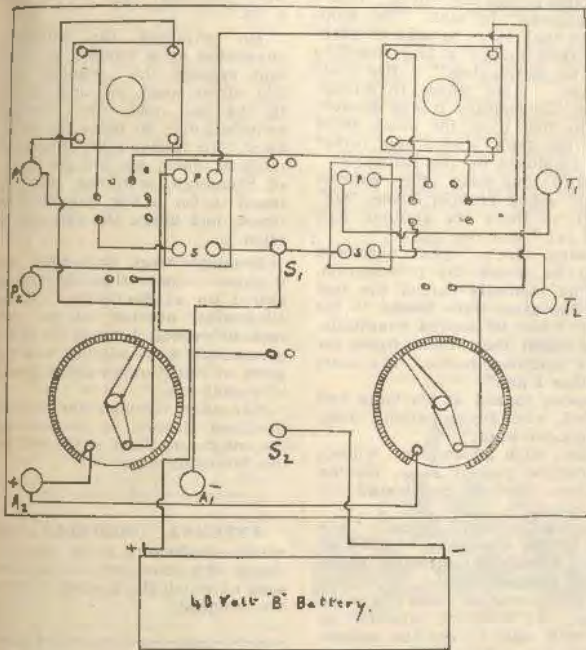


Fig 2.

**GOOD RESULTS.**

The following results have been obtained by Mr. D. K. Sidey, of Lindfield, with his set, which won the second prize in the recent "Wireless Weekly" competition:—

American and European stations, e.g. Lyons, Lafayette, Nauen, New York Central, New Brunswick, Darien, Cavite, Guam,

Pearl Harbour. Time signals re Sydney Observatory tests received from Lyons, Darien and New York. Through loud speaker under favourable conditions New York Central readable at 40 feet, Pearl Harbour and Guam at 40-50 feet, Cavite at 80 feet. Most Australian and New Zealand stations, Suva, New Caledonia, etc. R.M.S. Niagara 350 miles north-east of Suva. Speech and music distinct from Melbourne, Mr. Charles MacLurcan, Strathfield, 30 feet from loud speaker, speech and music.

**ATMOSPHERICS.**

Oh, it's hard to bear, when X's are there,  
And you want to hear the music;  
It vexes.  
When you've asked your girl round,  
and you can't hear a sound,  
In your phones, but the static and the Xs.

Oh were you by chance at the radio dance,  
You will realise now how complex is  
The fickle ether wave, for the music that it gave,  
Was mixed up with Xs—with Xs.

Oh, the Xs, the Xs, it sorely me perplexes,  
How to dodge the atmospherics and the Xs,  
They're the worry of my life, and I'd have a little wife,  
Were it not for the Exs,—the Exs.

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## The Escapee.

By  
G. H. M.

It was easily 106 degrees in the water-bag that noonday in the Glendon foothills, when three horsemen wound a steady way along the rough, sun-baked track.

Two were in the familiar field uniform of the mounted police, while the third was dressed in that untidy, yet picturesque collection that serves to distinguish the wanderer of the wilds, the world over.

The bushman brushed a persistent fly away with a shrug of his shoulders, and a curse. "I suppose," he muttered, "you two feel mighty proud of havin' caught Mulga Joe, eh? The police of three States 'as been after me for a couple o' year, an' in the end two—boys turns the trick on me.

He spat violently, and there was silence, but for the jingle of the horsetrappings and the thudding of hoofs on the hard earth.

As the bushman had said, the two troopers were proud of their capture. Mulga Joe was an outlaw who had made an unenviable reputation for himself throughout Australia. His offences ranged from petty theft to manslaughter, and constituted a very formidable list. His expert knowledge of the country and the ways of the bush enabled him to retain his freedom for so long.

Then the two young country-bred troopers were given a try to catch the notorious outlaw. Using all the bush-craft they knew, they followed their quarry stealthily for days and days, till at last the opportunity they sought presented itself. Mulga Joe, worn out after a hard ride, through the rough country, had settled himself down to rest. Sleep overcame him, and the rest was easy. Before he was properly awake, he had been disarmed and well secured.

Now the three were on their way to civilisation, and the nearest lock-up.

Keston, the younger of the troopers, reined in his horse and

pointed to a smudge of smoke that rose over the trees, a couple of miles across the valley. "That's the express," he said. "She stops at the tank there to take in water and then makes a fast non-stop run to Merrington." His mate nodded. He knew if anyone knew, the country it was Keston, for he had lived for many years near the tank, where his father was employed on the railway.

"How long does the express stay?" asked Trooper Joyce. "Oh! she'll be there for another half hour yet," was the reply.

Mulga Joe's eyes narrowed when he heard the information, and he mentally cursed the fact that his arms were bound to his side. Then he smiled cunningly. "Yer might loose these ropes for a few minutes, mates. It's cruel hot that I am."

Keston looked at his mate and nodded, and Joyce pulled loose the master knot.

Then, with a sudden whoop, the outlaw dashed away, leaving the two troopers spellbound for a moment.

"Quick," yelled Joyce, "he's making for the train," and he galloped off in the direction taken by the escapee.

With sweating and blowing horses, the troopers arrived at the tank, only to see the express pulling out. The outlaw's horse stood nearby, and the outlaw himself was slung under the rear carriage.

Keston was the first to speak. "The train does not even slow down before Merrington, so if we could get a message to the station before—Stanleigh—we could get Sgt. Cowles to get him there." But there was no telegraph at the lonely spot, and a ride to the office three miles away, would mean that it would be too late.

"I've got an idea," said Keston, "come into the old house. They made their way across the paddock and were welcomed by Keston's mother. The young trooper wasted no time, but went to his room, in the corner of which

stood a table of wireless gear. "It's a long time since I used her," he said, "but I'll give her a go."

He adjusted the telephone, connected up a number of cells, and pressed the sending key. The violet spark left and snapped in the gap, and the operator switched over to listen for an answer. To Keston's joy it came almost at once, his old pal Barry, of Stanleigh, who had just listened in for a few minutes after lunch, had heard the call and replied.

Messages were exchanged, and it came to pass that the express pulled up at Stanleigh. Mulga Joe, sorely puzzled at the new turn of events, dropped on to the permanent way—almost into the arms of Sgt. Cowles and a posse of volunteers.

"Another triumph for Radio," chuckled Keston, as he received the congratulations of the Sgt. on the following day.

**ANTENNA, UMBRELLA.**—One whose conductors form the elements of a cone from the elevated apex of which the leading in wires are brought.

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## THE ASSOCIATION.

The second meeting of the Radio Association of Australia, N.S.W. Branch, was held at the Protestant Hall, Castlereagh St., Sydney, on Tuesday, 24th October.

Mr. Hewett (Provisional President) occupied the chair. The letter from Mr. Malone as published in "Wireless Weekly," was read and discussed, and it was unanimously agreed that the Association should do everything in their power to assist the Authorities.

A rather lengthy discussion took place on the advisability of having experimenters who were connected with Commercial Wireless as officers of the Council. The main contention was that it was up to the Amateurs to realise the situation, and if they did not want such persons on the Council or Committee of their Association or Clubs then the prominent amateurs should come forward and take over the government of the various bodies. It was also pointed out that it was the amateurs themselves who had elected the various officers, clearly indicating that they thought the Commercially connected experimenters were the best men obtainable to control matters.

It was mentioned that with a multiplicity of commercial men holding office, nothing detrimental could be done by reason of the blue blooded amateurs holding the larger number of votes. Those loudest in their condemnation, were, apparently, the last to come forward and give a hand. It was asked "what harm could any one individual do?"

The following motion was unanimously agreed to "That this Council of the Radio Association of Australia expresses its opinion that experimenters, on the Council, engaged in Commercial Wireless, have in no way acted against the best interests of the Association or amateurs generally."

It was also unanimously agreed; "That this Council of the Radio Association of Australia affirms its confidence in Mr. O. F. Kingey, and further regrets that

he is unable to accept the position of Honorary Secretary."

The Rules and By-Laws as presented by the constitutional sub-committee, were unanimously adopted.

The following are the principal rules.

**Rule 4 Constitution.** Any Club, Society, Institute, or body having for its object, the advancement of radio science generally, shall, on payment of the prescribed capitation fee, be entitled to become a sub-branch of the Association, provided that there are at least 15 financial members over the age of 17 years, 5 of whom must hold radio licenses.

**Rule 5 Objects.**

- (a) To co-ordinate the efforts of the various radio clubs, societies and institutes in regard to all matters appertaining to the development of Radio communication

in all its phases and branches throughout Australia.

- (b) To safeguard the interests of amateurs and experimenters as a whole or individually at all times and take such steps as are deemed necessary so to do.
- (c) To assist the Radio Authorities in every direction possible.
- (d) To promote the general and material welfare of radio clubs, etc.
- (e) To establish sub-branches throughout N.S.W.
- (d) To affiliate with any other body having like aims and/or objects upon such terms and conditions as may be determined by the Council.

(Continued on Page 10)



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**RADIO ASSOCIATION.**

To do all such lawful acts and things as are incidental or conducive to the attainment of the above objects or to the general progress of the Association.

Rule 7 Capitation Fee. Each sub-branch of the Association shall pay, and be responsible for the payment (as prescribed in rule 6) to the Branch Secretary the sum of two (2/-) shillings per annum for each member on the books of the sub-branch at the half-yearly period (1st January and 1st July respectively).

The full rules will be printed and circulated to all sub-branches when funds will allow of same.

The election of Officers resulted:—

Mr. Hewett, president; Mr. Swinburne and Mr. Bowman, vice-presidents; Mr. Atkinson, hon. secretary; and Mr. Best, treasurer. The Secretary can be communicated with at the Electricity Dept., Sydney Town Hall.

**ANTENNA, FLAT TOP.**—An antenna having horizontal wires covering a large area at the top. The chief of this type are:—

- (a) The inverted L, in which the leading in wires are taken from one end of the long, narrow, horizontal section. This aerial is strongly directional in a direction opposite the free end. Owing to its ease of erection this type is very largely adopted in amateur stations.
- (b) The T aerial, in which the leading in wires are taken from the centre of the horizontal section. This type is practically non directional, and is an excellent one for general experimental work.

**ANTENNA, PLAIN.**—An approximately vertical single wire. The term "plain aerial" is used when a transmitter or receiver is coupled directly to the aerial without the addition of some means of tuning.

**ANTENNA CAGE.**—An antenna, the conductors of which are formed of a group of parallel wires arranged as the elements of a long cylinder.

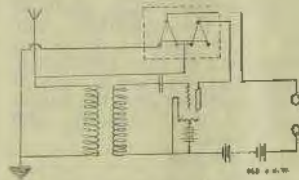
**WORTH KNOWING.**

Mr. P. G. Stephens (Balmain) writes:—

Here is a circuit for extra short wave reception by valve.

By extra short wave, I mean two hundred metres and under, using a 600 metre tuner, whether the inductances are of a fixed value or variable.

Furthermore, if anybody has made coils to receive Radio Tele-



graphy or Telephony on twelve to fourteen hundred metres they can use same to receive 600 metre signals without weakness in strength.

The only additional piece of apparatus required is a double pole, double throw switch, the design of which is left to the operator.

The circuit is what is known as the Primary Feed Back. Under ordinary conditions, the plate of the valve is in the Aerial Circuit, and the Telephone receivers in the Earth side of the inductance (as per diagram). To bring about the change of wave-length, reversal of connections is all that is required.



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Enquiries invited on all Wireless requirements.

November 3rd, 1922

WIRELESS WEEKLY

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THE NORTH SYDNEY RADIO CLUB.

The fortnightly general meeting of the North Sydney Radio Club was held at their club rooms on Tuesday, the 24th inst.

The business having been disposed of a lecture on "The Elementary Principles of Wireless and the Construction of small Sets" was delivered by Mr. Hill, to some of the less experienced members, who will doubtless derive a great deal of benefit from it.

Mr. Hill has shown himself to be a lecturer of no mean ability and it is hoped that he will be enabled to continue these excellent and instructive addresses.

Mr. Leaman, who recently met with a severe accident whilst motor cycling, has now completely recovered and has resumed his activities in the club.

The next business meeting will be held on Tuesday the 7th November and a cordial invitation is extended to all other clubs to be present.

It is notified for the information of radio clubs and experimenters generally that the club's call signal has been changed from N676 to 2GY as from 1st November.

LEICHHARDT AND DISTRICT RADIO SOCIETY.

At the third meeting of members of the above Society held at the club rooms, No. 3 Annesley Street, Leichhardt, on Tuesday, the 24th inst., a very instructive and interesting lecture on the construction of loud-speakers was delivered by Mr. W. Bird. Later morse practice was carried out.

The next meeting, which will be held for the purpose for dealing with business matters which have arisen since the first meet-

ing held on October 10th, will take place at the club room at 8 p.m. on Tuesday, November 7th. A good roll-up of members is expected. Any enquiries re the Leichhardt Society will be gladly answered by the Hon. Secretary Mr. W. J. Zech, 145 Booth Street, Annandale.

WESTERN SUBURBS AMATEUR WIRELESS ASSOCIATION.

The Social and Dance held by the Western Suburbs Amateur Wireless Association in the Masonic Hall, Auburn, on Saturday, October 28, was a great success in every way. Over a hundred people listened to radio music transmitted from Mr. MacLurcan's station at Strathfield. The music came in loudly, and was heard all over the hall without any difficulties.

The instruments were built and designed by the Club, and was operated by Mr. Brown, a member of the Club. Mr. Brown used three stages of amplification, the music being magnified by a magnavox. Valuable assistance was given by Mr. Challenger, Mr. Burman, Mr. St. Hill and Mr. Brown. It was their great efforts that made the dance such a great success.

AN ANNOUNCEMENT.

"Wireless Weekly" wants contributions. There are plenty of amateurs in Australia who can help their fellows by discussing the various problems met with during experimental work, and giving them points on the making and management of apparatus. There is room for good technical matter in these columns.

Interesting news items pertaining to Radio in Australia are also wanted.

All contributions published will be paid for.

Typed M.S.S. is preferred. Write on one side of the paper only. Suitable photographs on Radio subjects are also wanted.

Contributions should be addressed, The Editor, "Wireless Weekly," Box 378, G.P.O., Sydney. Unsuitable M.S.S. will be returned if stamps are enclosed for postage, but no responsibility is taken.

In Vancouver, if you want a receiving license, it is only necessary to fill in the prescribed form, pay the necessary fee, and present it at the G.P.O. window, and received the coveted document.

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